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8   UNITED STATES DISTRICT COURT

9   NORTHERN DISTRICT OF CALIFORNIA

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11 IN RE: SOCIAL MEDIA ADOLESCENT ADDICTION/PERSONAL INJURY	MDL No. 3047
12 PRODUCTS LIABILITY LITIGATION,	Case No. 4:22-md-03047-YGR (PHK)
13 This Document Relates To:	**PLAINTIFFS' RESPONSE TO DEFENDANTS' MOTION TO EXCLUDE**
14 ALL ACTIONS	**GENERAL CAUSATION TESTIMONY OF PLAINTIFFS' EXPERTS**
15	Judge: Hon. Yvonne Gonzalez Rogers
16	Magistrate Judge: Hon. Peter H. Kang

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RESPONSE TO MOTION TO EXCLUDE GENERAL
CAUSATION TESTIMONY OF PLAINTIFFS' EXPERTS
MDL NO. 3047 / CASE NO. 4:22-MD-03047

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I.   INTRODUCTION

2   Plaintiffs' general causation experts are leaders in their fields of psychiatric epidemiology,

3 addiction, psychology, eating disorders, generational trends, adolescent and brain development,

4 pediatrics, sleep health, public health, and school mental health interventions. Unlike Defendants'

5 experts, they have collectively published scores of studies on social media use and adolescent

6 mental health, including prior to this litigation. Based on a balanced review of the peer-reviewed

7 literature, and, in some cases, extensive clinical experience or years of fieldwork, Plaintiffs' experts

8 reached reliable opinions that Defendants' platforms harm youth mental health. These opinions

9 "reflect[] a reliable application of the principles and methods to the facts of th[is] case" and satisfy

10 the *Daubert* standard. Fed. R. Evid. 702.

11   As they did in the JCCP, Defendants have moved to exclude every single Plaintiffs' general

12 causation expert. *See* ECF 2295 (Mot. Exclude GC Test. ("Mot.")); ECF 2304 (Prinstein Mot.).

13 Judge Kuhl denied all of Defendants' motions to exclude the Personal Injury and School District

14 ("PI/SD") Plaintiffs' retained experts: Drs. Dimitri Christakis, Drew Cingel, Gary Goldfield, Anna

15 Lembke, Ramin Mojtabai, Eva Telzer, and Jean Twenge. *See Soc. Media Cases*, 2025 WL

16 2807828, *21-54 (Cal. Super. Sep. 22, 2025). She further denied Defendants' motion to exclude

17 Plaintiffs' non-retained expert, Mr. Arturo Béjar, granting only the motion as to the non-retained

18 expert, Ms. Lotte Rubaek, who Plaintiffs have now withdrawn as an expert.[1] *Id.* at 18-21, 41-44.

19 Despite Judge Kuhl's rulings, Defendants bring a nearly identical motion to exclude these experts,

20 as well as Plaintiffs' retained experts Drs. Stuart Murray (PI/SD), Sharon Hoover (SD-only),

21 Lauren Hale (AG-only), Bradley Zicherman (AG-only), and Mitch Prinstein (AG-only).

22   This Court should deny Defendants' motion. Defendants' arguments amount to nothing

23 more than mere disagreement with Plaintiffs' experts' conclusions or quibbles about the scientific

24 literature, which are fair-game for cross-examination but not exclusion. As they have made clear,

25 Defendants do not think social media use has any causal relationship with declining adolescent

26 mental health. The proper audience for this argument, however, is the jury, not the Court.

27 Substantive disagreement with an expert's conclusions is not a basis for exclusion under *Daubert*.

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[1] Ms. Rubaek remains a fact witness.

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1   *Engilis v. Monsanto Co.*, 151 F.4th 1040, 1050 (9th Cir. Aug. 12, 2025) ("To be sure, Rule 702 is

2   concerned with the soundness of the expert's methodology, rather than the correctness of the

3   expert's conclusions." (internal citation omitted)). Defendants, recognizing this basic legal point,

4   dress up their brief as a dispute over Plaintiffs' experts' "methodological failures." But the only

5   way they can shoehorn these arguments into the *Daubert* framework is by contorting Plaintiffs'

6   experts' reports and testimony beyond recognition. This fails to heed Judge Kuhl's warning that

7   "Defendants' frequent misrepresentations of deposition testimony (or other evidence) does not

8   inspire confidence in their credibility on *Sargon* issues," *Soc. Media Cases*, 2025 WL 2807828, at

9   *30, and this Court's attestation requirement under Case Management Order No. 27 (ECF 2274).

10   Defendants' selective parsing and nitpicking about Plaintiffs' experts' review of the

11   literature go to the weight of their testimony, not the admissibility of their opinions, and are best

12   suited for cross-examination. It is well established that a balanced review of the pertinent peer-

13   reviewed literature provides a sound basis for an expert's conclusions. *Hardeman v. Monsanto Co.*,

14   997 F.3d 941, 967 (9th Cir. 2021) (expert's methodology underlying his conclusion was sound

15   where, *inter alia*, he relied on "his clinical experience and reviewed scientific literature").

16   Plaintiffs' experts did just this, and many considered *hundreds* of on-point studies—both ones that

17   support and ones that do not support causation—in forming their opinions. Defendants' suggestion

18   that Plaintiffs' experts must be excluded because they needed to consider every single article on a

19   topic, *contra McBroom v. Ethicon, Inc.*, 2021 WL 2709292, at *3 (D. Ariz. July 1, 2021), or rule

20   out every possible alternative cause or confounding factor,[2] *contra Westberry v. Gislaved Gummi*

21   *AB*, 178 F.3d 257, 265 (4th Cir. 1999), and *Dugger v. Union Carbide Corp.*, 2019 WL 4750568, at

22   *5 (D. Md. Sept. 30, 2019), is not the law (nor what Defendants' own experts did). Also, as this

23   Court has recognized (*see* ECF 430 at 4; Tr. 37:18-38:1 (Jan. 26, 2024)), Defendants' non-public

24   internal research is a key source of relevant scientific knowledge here. Plaintiffs' experts' reliance

25   on internal company documents—particularly those that could "stand alone as medical research

26   and literature"—to "develop and reinforce [their] opinions" is appropriate. *In re C. R. Bard, Inc.*,

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[2] *See Wendell v. GlaxoSmithKline LLC*, 858 F.3d 1227, 1237 (9th Cir. 2017) (finding that *Daubert*
28   does "not require experts to eliminate all other possible causes of a condition for the expert's
testimony to be reliable. It is enough that the proposed cause be a substantial causative factor").

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1   *Pelvic Repair Sys. Prods. Liab. Litig.*, 2018 WL 4220602, at *4 (S.D.W. Va. Sept. 5, 2018).

2   Without any basis in *Daubert* to seek exclusion, Defendants try to repurpose their

3   previously rejected argument that Section 230 bars any claim that would not have occurred but for

4   content or their so-called "publishing features." Their immunity theory is presented as a rule of

5   evidence that would exclude consideration of any underlying facts relating to publishing activity.

6   But Section 230 does not restrict evidence, let alone provide "immunity simply because publication

7   of third-party content is relevant to or a but-for cause of the plaintiff's harm." ECF 430 at 11; *see*

8   *also Calise v. Meta Platforms, Inc.*, 103 F.4th 732, 742 (9th Cir. 2024) ("[I]t is not enough that a

9   claim, *including its underlying facts*, stems from third-party content for § 230 immunity to apply."

10   (emphasis added)). A ruling to the contrary would create the very "general immunity from liability

11   deriving from third-party content" that courts have forcefully rejected. *Doe v. Internet Brands, Inc.*,

12   824 F.3d 846, 853 (9th Cir. 2016). Further, to the extent Defendants are making a Rule 403

13   argument based on their vague reference to "prejudicial jury confusion," Mot. 15, given that Section

14   230 immunity is not a "but-for" test, it cannot be more prejudicial than probative for Plaintiffs'

15   experts to testify about the role of content and publishing features in the causal chain.

16   In any event, Defendants' arguments fail at the outset because they ignore that Plaintiffs'

17   consumer protection deception claims and tort failure-to-warn claims are viable as to *all* platform

18   features and the platforms as a *whole*." *In re Soc. Media Adolescent Addiction/Pers. Inj. Prods.*

19   *Liab. Litig.*, 753 F. Supp. 3d 849, 865 (N.D. Cal. 2024) ("[T]he Court declines at this stage to

20   dismiss any theories of a failure-to-warn of known risks of addiction attendant to any platform

21   features or as to platform construction in general."), *appeal dismissed sub nom. Fla. Off. of Att'y*

22   *Gen. v. Meta Platforms, Inc.*, 2024 WL 5443167 (9th Cir. Dec. 16, 2024), *mot. to certify appeal*

23   *denied*, 2025 WL 1182578 (N.D. Cal. Mar. 11, 2025); ECF 1267 (same). In the end, what actually

24   drives Defendants' Section 230 motion is not any infirmity in the experts' methods but their

25   opinions—shared by many of Defendants' own employees—that Defendants' platforms are

26   addictive and harm children. While Defendants may disagree, weighing experts' conclusions is a

27   matter for the jury.

28   There is no serious question that Plaintiffs' general causation experts' opinions are

1 admissible under *Daubert*. Defendants' motion should be denied in its entirety.

2 **II.   BACKGROUND**

3   In addition to denying Defendants' motion to exclude Plaintiffs' experts' testimony on

4 Section 230 and First Amendment grounds,[3] Judge Kuhl denied Defendants' reliability challenges

5 to Plaintiffs' experts. *See Soc. Media Cases*, 2025 WL 2807828. Applying the *Sargon* standard,

6 Judge Kuhl in relevant part:

7   • Denied in total Defendants' motions to exclude expert testimony of Drs. Cingel (*id.*

8   at *21-26), Lembke (*id.* at *26-31), Christakis (*id.* at *31-36), Mojtabai (*id.* at *36-

9   41), Telzer (*id.* at *44-49), and Twenge (*id.* at *49-54).

10   • Denied in large part Defendants' motion to exclude expert testimony of Dr.

11   Goldfield, excluding only the opinion that "Defendants knew or should have known

12   that children and youth are more vulnerable to the mental health risks presented by

13   their social media platforms." *Id.* at *8-14. Plaintiffs here do not offer that opinion

14   from Dr. Goldfield.

15   • Denied Defendants' motion to exclude Mr. Béjar, clarifying he may not testify "on

16   the question of whether use of social media causes specific mental health harms"

17   because he is not qualified to do so, but may testify "about the design features

18   employed by Meta, how those design features led to excessive use and safety

19   concerns" and that "Meta's statements regarding safety were 'misleading'." *Id.* at

20   *18-21. Plaintiffs here offer only Mr. Béjar's opinions permitted by Judge Kuhl.

21   Defendants' argument that Judge Kuhl's analysis is distinguishable from that which this

22 Court must undertake falls flat. Although it is true that Judge Kuhl followed state court cases like

23 *Garner v. BNSF Ry. Co.*, 98 Cal. App. 5th 660 (2024), the reliability analysis under the California

24 rules of evidence and the federal rules is not meaningfully different. *See Sargon Enters., Inc. v.*

25 *Univ. of S. California*, 55 Cal. 4th 747, 772, (2012) ("The high court warned that the gatekeeper's

26 focus 'must be solely on principles and methodology, not on the conclusions that they generate.'"

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28 [3] *See Plaintiffs' Opposition to Defendants' Motion to Exclude Plaintiffs' Experts' General Causation Opinions for Failure to Account for Section 230 and the First Amendment* ("Section 230 Brief" or "Pls.' 230 Br."), filed concurrently with this brief.

1   (quoting *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 595 (1993))). Indeed,

2   throughout the *Garner* decision, the court relies on *Daubert* precedent in its analysis. *See, e.g.*,

3   *Garner*, 98 Cal. App. 5th at 688 ("Vigorous cross-examination, presentation of contrary evidence,

4   and careful instruction on the burden of proof are the traditional and appropriate means of attacking

5   shaky but admissible evidence." (quoting *Daubert*, 509 U.S. at 596)). Moreover, Judge Kuhl also

6   looked to federal case law, including Section 230 cases. *Soc. Media Cases*, 2025 WL 2807828, at

7   *10, 33, 37, 46, 51 (citing *Internet Brands, Inc.*, 824 F.3d at 853). Notably, she rejected Defendants'

8   argument analogizing this case to the out of circuit, district court decision *In re Acetaminophen -*

9   *ASD-ADHD Products Liability Litigation*, 707 F. Supp. 3d 309 (S.D.N.Y. 2023), discussing at

10   length why it is "*factually distinguishable.*" *Id.* at *11-12 (emphasis added). Those same factual

11   distinctions equally apply here.

12   Even if it were true that a relaxed standard was applied in the JCCP, for the reasons noted

13   above and set forth in detail below, Plaintiffs have likewise met their burden under federal law.

III.   LEGAL STANDARD

15   Broadly speaking, an expert must: (1) be qualified in their field; (2) use reliable data and

16   methodology; and (3) offer testimony that will assist the trier of fact. Fed. R. Evid. 702; *see also*

17   *Engilis*, 151 F.4th at 1047. The focus of the Court's inquiry must be on the expert's methods, not

18   their conclusions. *See In re Google RTB Consumer Privacy Litig.*, 2024 WL 2242690, at *2 (N.D.

19   Cal. Apr. 4, 2024) (Gonzalez Rogers, J.). Although there is not a "categorical preference for

20   admitting expert testimony," nothing in the 2023 amendment to the Rule suggests it should not still

21   be "applied with a 'liberal thrust' favoring admission" when the proponent of expert testimony by

22   a preponderance of evidence "satisfies the threshold requirements established by Rule 702" as

23   Plaintiffs have done here. *Engilis*, 151 F.4th at 1050; *see also In re Google*, 2024 WL 2242690, at

24   *2 n.3 (noting there has been no change to "the intent of the rule, rather it provides further clarity").

IV.   ARGUMENT

26   **A.   Defendants' crosscutting challenges to Plaintiffs' experts' testimony are not bases for exclusion.**

27

28   Defendants move to exclude Plaintiffs' experts' general causation opinions based on a

1   number of crosscutting arguments. Defendants claim: (1) Plaintiffs' experts' testimony is barred by

2   Section 230 and the First Amendment; (2) social media addiction does not exist; (3) the scientific

3   literature that Plaintiffs' experts rely on has limitations and does not *prove* scientific causation;

4   (4) Plaintiffs' experts rely on studies that measure self-reported symptoms versus clinical

5   diagnoses; (5) Plaintiffs' experts lump all social media platforms together; and (6) Plaintiffs'

6   experts impermissibly narrate Defendants' internal company documents or opine on Defendants'

7   state of mind, knowledge, motivations, or intent.

8   Plaintiffs' opposition to Defendants' Section 230 and First Amendment challenges to their

9   experts' testimony is fully set forth in Plaintiffs' Section 230 Brief. Plaintiffs address each of the

10   other crosscutting issues generally in this section and then address Defendants' blatant

11   mischaracterizations of Plaintiffs' experts' testimony and other unique arguments in the respective

12   expert-specific sections below.

   1.   Plaintiffs' experts' opinions regarding social media addiction are diagnostically valid and grounded in the science of addiction medicine.

15   Defendants' objection that the Diagnostic and Statistical Manual of Mental Disorders

16   ("DSM-5") and the International Classification of Diseases 11th Edition ("ICD-11") do not list

17   "social media addiction" as a clinical disorder is not a basis to exclude Plaintiffs' experts'

18   conclusions that it exists and is clinically relevant. *See U.S. v. Finley*, 301 F.3d 1000, 1012 (9th Cir.

19   2002) (rejecting *Daubert* challenge of diagnosed mental disorder where condition was unlisted in

20   DSM); *Peña v. Clark Cnty.*, 2023 WL 3293093, at *4-5 (W.D. Wash. May 5, 2023) (finding "the

21   jury can easily understand that these terms are not present in the DSM" and that defendant's

22   objection is more appropriate for cross-examination). Defendants' argument is at best an issue of

23   fact for the jury. *See S.M. v. J.K.*, 262 F.3d 914, 921-22 (9th Cir. 2001).

24   First, the DSM-5 is "by no means the end all and be all of how to diagnose mental

25   disorders." Ex. 1,[4] Lembke JCCP Dep. 168:12-69:5 (pointing to an example that at one point the

26   DSM listed homosexuality as a mental health disorder); Ex. 2, Telzer JCCP Dep. 377:5-13 ("[T]he

27   [DSM-5] is not the sole indicator of diagnostic criteria, and there are many others in the field who

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[4] All exhibits cited herein are attached to the Declaration of Lexi J. Hazam.

1   acknowledge and have put forth presentations and statements that social media addiction is a real

2   thing . . .”); Ex. 3, Prinstein Dep. 184:6-12 (“[The DSM has] great criticisms among many about it,

3   [but] yes, it is currently recognized as a limited but available resource.”); Ex. 4, Zicherman Dep.

4   249:23-50:2 (“It took 40 years from the genesis and idea of autism spectrum disorder to the point

5   it was recognized in the DSM. [The] DSM has a history of demonstrating that [it] take[s] a long . .

6   . time to recognize a condition.”). As Plaintiffs’ experts explained, the DSM is evolving, and social

7   media addiction “may be in the future versions of the DSM” based on similar criteria to internet

8   gaming disorder. Ex. 5, Mojtabai JCCP Dep. 126:23-27:16; Ex. 6, Mojtabai Reb. Rep. 4, ¶II.C.2-

9   3; Ex. 7, Lembke Reb. Rep. 4-5, ¶B.2.b; Ex. 3, Prinstein Dep. 185:4-5 (“[S]ocial media didn’t exist

10   in its form when the DSM came out.”); Ex. 8, Zicherman Rep. ¶25. Indeed, the American

11   Psychiatric Association (“APA”)—which is the same association that publishes the DSM-5—

12   recognizes social media addiction on its website and defines it as involving “problematic and

13   compulsive use of social media; an obsessive need to check and update social media platforms,

14   often resulting in problems in functioning and disrupted real-world relationships.” Ex. 9, APA,

15   *Technology Addiction* (Feb. 2024). The APA further notes that “[e]xcessive problematic use of

16   social media and video games among children and adolescents has the potential to develop into a

17   behavioral addiction” that “can have a negative impact on their psychological, physical, social, and

18   developmental well-being,” which “can lead to significant distress and contribute to other mental

19   health conditions such as anxiety, depression and insomnia.” *Id.* (cleaned up).

20   Second, Defendants are factually wrong that the literature does not recognize social media

21   addiction as a clinically relevant disorder. Dr. Lembke, for example, walks through health

22   authorities and peer-reviewed literature validating social media addiction as a psychiatric condition,

23   including van den Eijnden et al.’s Social Media Disorder Scale and the World Health

24   Organization’s application of it in 2024, the Bergen Social Media Addiction Scale, and the

25   aforementioned 2024 statement from the APA. *See* Ex. 10, Lembke Rep. 11-12, ¶C.2.f; *see also*

26   Ex. 11, Christakis Reb. Rep. ¶58. Despite Defendants’ objection that there is no uniform term or

27   phrase used to define social media addiction (Mot. at 32), the scientific literature recognizes that it

28   “has been defined broadly along the same diagnostic criteria as other behavioral addictions, such

1   as pathological gambling or compulsive shopping. The concept also shares many commonalities

2   with traditional substance dependencies such as nicotine and alcohol dependence." *See* Ex. 10,

3   Lembke Rep. 9-10, ¶C.2.d.i; Ex. 7, Lembke Reb. Rep. 3, ¶B.1.h ("Defendants' use of such

4   alternative terms should not be interpreted to mean that there is controversy in the field about what

5   addiction is. There is not. Addiction has been well defined for centuries."); *see also* Ex. 12, Prinstein

6   Rep. ¶35 ("[S]cientists do not typically discuss 'addiction' to social media use for predominantly

7   semantic reasons, but scientists do generally recognize . . . symptoms of clinical dependency to

8   social media, including withdrawal, tolerance, excessive and uncontrolled use, causing impairment

9   in daily tasks."); Ex. 3, Prinstein Dep. 318:24-19:10 ("[Our lab] use[s] the criteria directly from the

10   DSM-5 for substance dependency that's used for other substances, but we swap out the word of the

11   substance—let's say 'cocaine'—for 'Instagram' or 'social media,' and then we're able to take . . .

12   a diagnostic assessment of how much kids are experiencing a dependency, a clinical dependency

13   to social media, including Meta's products."); Ex. 8, Zicherman Rep. ¶¶26-34 (describing his

14   professional practice of "adapt[ing] the criteria for substance use disorder, and substitut[ing] the

15   word technology, social media, or video game, for the abused substance").

16   Likewise, Dr. Mojtabai explained that "[d]iagnostic criteria for social media addiction have

17   been proposed and several questionnaires and scales have been developed and validated to measure

18   social media addiction; both diagnostic criteria and addiction scales are extensively represented and

19   widely accepted in literature." Ex. 13, Mojtabai Rep. ¶101; *see also* Ex. 8, Zicherman Rep. ¶24

20   n.13, 10, ¶26 n.21; Ex. 14, Zicherman Reb. Rep. 9-10, ¶18. Drs. Lembke, Christakis, Mojtabai, and

21   Zicherman also have real world, clinical experience in diagnosing and treating patients with social

22   media addiction. *See* Ex. 10, Lembke Rep. 2, ¶B.6; Ex. 15, Christakis Rep. ¶19; Ex. 5, Mojtabai

23   JCCP Dep. 60:14-61:13 (stating he has treated "patients who spent a large amount of time on social

24   media" that he opined "was a contributing factor to their mental health problems"); Ex. 8,

25   Zicherman Rep. ¶¶5, 10, 13-15 ("Approximately 25-35 percent of my new intake requests are for

26   technology addiction concerns. The most common form of technology addiction I am requested to

27   evaluate is social media addiction. Of the patients presenting for intake due to substance use

28   concerns, at least 50 percent of those individuals have concerning social media use habits that meet

1   criteria for a technology addiction disorder.").

2   Third, as with other addictions, the definition of and diagnostic criteria for social media

3   addiction do not require a specific amount of use. Clinicians do not diagnose social media addiction

4   solely on the amount of time a patient spends on these platforms. *See* Ex. 7, Lembke Reb. Rep. 17,

5   ¶B.4.f; Ex. 1, Lembke JCCP Dep. 186:4-87:5 ("I don't have a specific quantity of time because it's

6   not a diagnosis that's based on time. Time is an important indicator . . . But time alone is not how

7   the diagnosis is made."); Ex. 5, Mojtabai JCCP Dep. 509:12-23 ("Putting a number on it is not

8   really, I don't think, appropriate. It's also the way they engage in the social media, is a factor. . .

9   But the number—excessive use is a use that exceeds what the person intends to do or wishes to do

10   and is associated with forgoing other activities, is impairing in functioning []—has distress

11   associated with it, is associated with loss of control."); Ex. 16, Cingel JCCP Dep. 147:9-23 ("To

12   me, problematic use refers to a context of use where the individual, whomever it is, is using late at

13   night, displacing sleep…in the case of adolescents, getting into conflicts with parents and peers

14   because of their use, has a feeling where I can't put the device down or can't stop using social

15   media or I feel, you know, the sense where I just – I want to be on there and be using it. And that's

16   the – that's the definition that I use in my research."); Ex. 4, Zicherman Dep. 177:8-79:3

17   ("Excessive use could potentially be different amounts of use. . . . [E]xcessive use is causing

18   functional impairment; some form of harm in a child or teenager's life, whether it's related to

19   academic achievement, relationships with family, [or] the ability to get good, restful sleep, among

20   other considerations."). Defendants' complaint that Plaintiffs' experts do not offer a prescribed

21   amount of usage to meet the threshold of addiction is thus misguided and lacks any basis in science.

22   *See* Mot. at 20-21, 43.

23   In short, Defendants' arguments regarding social media addiction are better saved for cross-

24   examination; they are not reasons for exclusion.

25   **2.   Plaintiffs' experts considered the totality of the evidence in forming
                     their causation opinions.**
26

27   Plaintiffs' experts conducted extensive reviews of pertinent peer-reviewed literature,

28   including time-series, ecological, correlational, longitudinal, meta-analyses, systematic reviews,

1   and experimental studies in forming their opinions. They reviewed the totality of the evidence, not

2   only studies that were of a certain design or that supported their conclusions. *See, e.g.*, Ex. 5,

3   Mojtabai JCCP Dep. 200:14-21 ("I'm looking at the totality of this data."); Ex. 17, Twenge JCCP

4   Dep. 118:2-7 (taking "the totality of the evidence, that there's a causal path from social media use

5   to low psychological wellbeing, depression, and so on"); Ex. 18, Lembke MDL Dep. 262:9-16

6   ("Yet it's very clear, when you take the evidence in its totality, that you can make a causal inference,

7   which not only have I done that, but Meta has done that. There is a ton of evidence showing that

8   Meta's own researchers see a clear link between out-of-control use, excessive time spent on the

9   platform, their design features, and negative life impacts. That it's unambiguous."); Ex. 3, Prinstein

10   Dep. 171:23-72:3 ("[W]e are engaged in a debate through this dialogue, in my opinion, to take the

11   best available evidence that we have to determine whether, more likely than not, we have a

12   preventable risk that is harming kids; and I believe the answer is yes."); Ex. 19, Hale Dep. 102:20-

13   25 ("But based on the totality of the evidence, I interpret the current data from my own research as

14   well as all of the research in the field to show a causal relationship [between social media use and

15   sleep] such that we can use the word 'impairs'."). Together with their expertise and experience, this

16   provides a sound basis for their conclusions. *Hardeman*, 997 F.3d at 967.

17   Defendants' approach to the scientific literature is to either focus solely on cross-sectional

18   studies, or to cherry-pick a handful of studies discussed by Plaintiffs' experts and then nitpick select

19   findings therein. For example, Defendants cite to Kreski et al. (2021) to claim that the literature has

20   "found only weak and inconsistent relationships between use of social media and [mental health]

21   symptoms." Mot. at 6, Ex. 8. But Defendants ignore that Kreski et al. (2021) "used a measure of

22   social media use ranging from 'never' to 'every day' that lacks variance, a factor known to severely

23   reduce effect sizes." Ex. 20, Twenge Reb. Rep. 2, ¶1.2.xiv, ¶68. In other words, the options the

24   participants in the Kreski study could select maxed out at "daily," with no options for how many

25   hours a day, even though the evidence indicates teens spend an average of 4.8 hours on social media

26   per day. Ex. 21, Rothwell, J., *Teens spend average of 4.8 hours on social media per day*, Gallup

27   (Oct. 13, 2023). This selective parsing does not go to the admissibility of Plaintiffs' experts'

28   opinions but rather to the weight that they should be accorded by the jury. Put another way,

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1   Defendants' objections to some of the underlying studies may be fodder for cross-examination but

2   are not grounds for exclusion. *In re Roundup Prods. Liab. Litig.*, 390 F. Supp. 3d 1102, 1150-51

3   (N.D. Cal. 2018) (Chhabria, J.) ("[D]ifferent interpretations of these studies are not necessarily

4   evidence of unreliability;" the objecting party "may raise their concerns via cross-examination"),

5   *aff'd sub nom. Hardeman v. Monsanto Co.*, 997 F.3d 941 (9th Cir. 2021).

6   Defendants' obsession with discrediting cross-sectional studies is also misplaced. Cross-

7   sectional studies are a type of observational or correlational study. *See* Ex. 22, Fed. Judicial Center,

8   Ref. Manual on Scientific Evid., at 556 (3d ed. 2011). It is axiomatic that in the public-health

9   sphere—especially where exposure to a product may cause harm—the majority of the available

10   scientific studies are observational. *See id.* at 220. The classic example is smoking and lung cancer,

11   where a causal link was drawn initially based solely on correlational studies. *See* Ex. 23, Hill, A.B.,

12   *The Environment and Disease: Association or Causation?*, Proc. R. Soc. Med. (1965), at 296 ("The

13   lesson here is that broadly the same answer has been reached in quite a wide variety of situations

14   and techniques. In other words we can justifiably infer that the association is not due to some

15   constant error or fallacy that permeates every inquiry."). Because of this, it is beside the point that

16   certain of the studies Plaintiffs' experts cite may "disclaim[] having proven causation." *In re Bair

17   Hugger Forced Air Warning Devices Prods. Liab. Litig.*, 9 F.4th 768, 779 (8th Cir. 2021). A single

18   study very rarely in itself "proves" causation, but as part of a body of studies considered, such

19   studies still "can be brought to bear on the question of causation and can be very useful to answering

20   that question," particularly in the hands of a well-qualified expert such as Plaintiffs' experts. *Id.*

21   (cleaned up).[5] Had Plaintiffs' experts ignored this evidence, they would have committed the same

22   methodological foul that resulted in experts being excluded in the case law Defendants cite. *See In

23   re Acetaminophen*, 707 F. Supp. 3d at 356.

24   Defendants further cite to the National Academies of Sciences, Engineering, & Medicine

25   _____

26   [5] *See also Milward v. Acuity Specialty Prods. Grp., Inc.*, 639 F.3d 11, 23 (1st Cir. 2011) (finding "[t]he district court erred in reasoning that because no one line of evidence supported a reliable inference of causation, an inference of causation based on the totality of the evidence was unreliable"); *In re Testosterone Replacement Therapy Prods. Liab. Litig.*, 2017 WL 1833173, at *11 (N.D. Ill. May 8, 2017) (concluding "that it is not necessary . . . for plaintiffs' experts to rely on a study whose author herself concludes that a causal connection exists, as long as the experts adequately explain why their view of the evidence supports a finding of causation").

1   ("NASEM") Report (Mot. at Ex. 1) and the U.S. Surgeon General's Advisory (Mot. at Ex. 7) to

2   claim there is no scientific consensus on social media addiction or whether social media is safe for

3   children. *See* Mot. at 5, 12. Defendants' oversimplification and truncated quotes from these reports

4   mischaracterize them. For example, Dr. Christakis pointed out at deposition that the NASEM report

5   contains internal inconsistencies. On the one hand, NASEM contains a statement that the committee

6   did not believe the literature they reviewed "support[ed] the conclusion that social media causes

7   changes in adolescent health at the population level," but on the other, the very first paragraph of

8   the NASEM report states "[t]he science suggests that some features of social media function can

9   harm some young people's mental health." Ex. 24, Christakis JCCP Dep. 332:11-33:13. Dr.

10 Twenge likewise expressed disagreement with NASEM's conclusions and explained why based on

11 the evidence. *See* Ex. 17, Twenge JCCP Dep. 331:11-37:6. Similarly, Defendants cherry-pick

12 statements from the U.S. Surgeon General's Advisory on Social Media and Youth Mental Health,

13 while omitting its conclusion that "the current body of evidence indicates that while social media

14 may have benefits for some children and adolescents, there are ample indicators that social media

15 can also have a profound risk of harm to the mental health and well-being of children and

16 adolescents." *See* Ex. 25, U.S. Surgeon Gen., *Soc. Media and Youth Mental Health Advisory*, at 4.

17   Regardless, the Court need not determine whether Defendants' reading of these "consensus"

18 statements, or Plaintiffs' experts' reading, is correct. This "is exactly the kind of dispute a jury can

19 and should resolve." *In re Abbott Lab'ys, et al., Preterm Infant Nutrition Prods. Liab. Litig.*, 2025

20 WL 1283927, at *16 (N.D. Ill. May 2, 2025). "It is not the Court's task to take sides on questions

21 that are currently the focus of extensive scientific research and debate—and on which reasonable

22 scientists can clearly disagree." *In re Roundup Prods. Liab. Litig.*, 713 F. Supp. 3d 681, 689 (N.D.

23 Cal. 2024) (Chhabria, J.) (internal citation omitted).

24   **3.   Reliance on self-reported data is standard in mental-health research.**

25 Defendants' criticism of Plaintiffs' experts' reliance on studies that include self-reported

26 symptoms, rather than diagnosed psychiatric disorders, runs counter to the standard in mental-

27 health research. As Dr. Mojtabai explained at his deposition, "in general, in mental health research

28 and psychiatric epidemiology, we rely on validated self-report measures." Ex. 5, Mojtabai JCCP

Dep. 240:17-19. Dr. Twenge likewise confirmed self-reported measures are "widely used and generally accepted in research on mental health." Ex. 20, Twenge Reb. Rep. ¶73; *see also* Ex. 17, Twenge JCCP Dep. 148:5-24 (explaining "self-report is a very common method"). Validated self-report measures are standardized questionnaires and rating scales that have been tested "by comparing their ratings with the diagnoses made by clinicians or by comparing their results with other measures of the same condition (e.g., comparing two rating scales of depression). Validation in this context means ensuring that the questionnaire measures what it is supposed to measure." Ex. 13, Mojtabai Rep. ¶44. As Dr. Twenge explained it is "a false distinction, that the diagnosis by a mental health professional would be wildly different from, say, self-reports of depressive symptoms. They're not. There's a lot of overlap between those. That's why those questionnaires are used as screenings for possible diagnosis." Ex. 17, Twenge JCCP Dep. 157:2-25; *see also id.* 198:24-99:7 (explaining self-reported measures of depressive symptoms "will highly correlate with that type of diagnosis"); *accord id.* 223:25-24:10; 231:22-32:24; 362:17-63:5; Ex. 26, Prinstein Reb. Rep. ¶15 ("[Defendants] criticize that, in most studies, research participants self-report dependency problems. That criticism is not valid because, in fact, self-reporting is the most common way that dependency symptoms are assessed."). Indeed, Defendants' own experts have employed self-reported methods in their own research. *See, e.g.*, Ex. 27, Gotlib JCCP Dep. 71:5-74:14; Ex. 28, Buka Dep. 116:14-20; 149:18-50:1. In short, Plaintiffs' experts have employed "in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999).

Further, these validated questionnaires are not merely measuring transient symptoms as Defendants claim. Dr. Twenge explained that "[m]easures of happiness, life satisfaction, and well-being are strongly correlated with the development and prevention of mental disorders, especially depression." Ex. 20, Twenge Reb. Rep. ¶73; *see also* Ex. 17, Twenge JCCP Dep. 128:4-30:25 (explaining "it's very common" for a "rise in depressive symptoms based on questionnaire responses" to be consistent with "a rise in major depressive episode[s] as defined by the DSM" at the population level). Contrary to Defendants' representation (Mot. at 41-42), Dr. Mojtabai confirmed that "well-established screening studies [and], screening measures" have "established

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1   sensitivity and specificity, positive predictive value." Ex. 29, Mojtabai MDL Dep. 79:11-24

2   (cleaned up). Similarly, Dr. Murray explained that psychiatric disorders "are all predicated on

3   symptoms, and if something exacerbates symptom severity, that is part . . . of a disorder." Ex. 30,

4   Murray JCCP Dep. 245:21-24; *see also id.* 118:4-10 ("[B]ody dissatisfaction is . . . a really robust

5   predictor of the onset of other symptoms and other diagnoses.").

6   Thus this case is not akin to the analysis at issue in *In re Acetaminophen*, where the expert

7   relied exclusively on "transdiagnostic" analysis that had not been validated or subjected to peer

8   review, and that was based only on the expert's inconclusive assertion that there "*may* be overlap

9   in the underlying biology of some of the symptoms of the [two] disorders, which *may* be relevant

10 to a causal analysis." *In re Acetaminophen*, 707 F. Supp. 3d at 364; *see also Soc. Media Cases*,

11 2025 WL 2807828, at *11-12 (finding *Acetaminophen* factually distinguishable because in this case

12 Plaintiffs "allege a wide range of mental and emotional harm" and "Defendants [did] not

13 demonstrate that experts in the field of psychiatry or psychology always separate every different

14 type of mental health condition when analyzing what has caused the condition or conditions"). Self-

15 reported symptoms in response to these validated psychiatric questionnaires are likewise not akin

16 to the respiratory and sinus symptoms measured in the case law Defendants rely on from the

17 Southern District of Mississippi. *See Williams v. BP Expl. & Prod. Inc.*, 2024 WL 340237, at *6

18 (S.D. Miss. Jan. 30, 2024) (excluding expert opinion because it concluded that oil-spill exposure

19 caused *chronic conditions* but drew that conclusion from one study about *acute symptoms* that

20 "specifically states that its assessments were not intended to describe or investigate potential long-

21 term or chronic health effects"), *aff'd,* 143 F.4th 593 (5th Cir. 2025); *Dufour v. BP Expl. & Prod.*

22 *Inc.*, 2023 WL 3807923, at *12 (S.D. Miss. June 2, 2023) (finding that same expert in *Williams*

23 relying on same study had "not provided a reasonable basis for using respiratory symptoms alone

24 as a proxy for chronic asthma in opining as to causation in [plaintiff's] case").

25   Moreover, the datasets Dr. Twenge relies on, for example, do include rigorous assessments

26 of symptoms akin to clinical diagnoses of the alleged injuries. *See, e.g.*, Ex. 17, Twenge JCCP Dep.

27 131:8-13 ("[C]ertainly there is time series data that uses the DSM clinical interview for major

28 depressive episode. And there's at least one correlational study that I know of that uses an

abbreviated version of a clinical interview to assess disorders."); *id.* 157:10-16 (explaining that in the National Survey on Drug Use and Health, mental health symptoms are measured "through an interview, and it is based on the DSM criteria for a major depressive episode"). But, mental health research does not require clinical interviews or diagnoses, and thus there is no analytical gap between the research and Plaintiffs' experts' opinions as Defendants claim. As Dr. Mojtabai explained, self-report screening scales "can be used in research by themselves or they can be used in a clinic as a screening measure." Ex. 29, Mojtabai MDL Dep. 52:5-13. Academics have in fact considered reliance on clinical diagnoses in mental health research as a limitation, just as they have reliance on self-reported symptoms. *See, e.g.*, Ex. 31, Mojtabai, et al., *Trends in Mental Disorders in Children and Adolescents Receiving Treatment in the State Mental Health System*, J. Am. Acad. Child Adolesc. Psychiatry (2024) (listing first limitation as "the study was based on clinician diagnoses rather than research diagnoses, and therefore the recorded diagnoses are open to practice style variations and are not subject to reliability assessment or expert validation"). In other words, both have advantages and disadvantages.

Again, Defendants' objections to the underlying studies should be reserved for cross-examination; they are not grounds for exclusion.

4.   Plaintiffs' experts properly extrapolated from the research to each of Defendants' platforms.

Defendants' attack on Plaintiffs' experts for purportedly failing to distinguish among the various platforms at issue in this case and lumping all Defendant platforms together[6] is both inapplicable and misguided, and was rejected by Judge Kuhl. *Soc. Media Cases*, 2025 WL 2807828, at *11, 25 (rejecting this argument as "an appropriate basis for excluding [expert's] testimony"). As Judge Kuhl found, Defendants have "failed to demonstrate that their social media platforms are so different from each other that it would be scientifically unreliable to investigate their mental health effects as a group." *Id.* at *12, 40, 52. There is no requirement that Plaintiffs' experts' testimony—or the numerous rigorous studies investigating the link between social media and adolescent mental health—must have isolated and quantified the individual impact of each of

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[6] *See, e.g.*, Mot. at 18-19 (Cingel), 23-25 (Goldfield), 40 (Mojtabai), 50 (Murray), 64-65 (Twenge), 67 (Hoover), 87 (Hale), 93 (Zicherman).

1   Defendants' platforms individually. *See Wendell*, 858 F.3d at 1237 (holding a "plethora of peer

2   reviewed evidence that *specifically* shows causation" is not required and the "interests of justice

3   favor leaving difficult issues in the hands of the jury and relying on the safeguards of the adversary

4   system—vigorous cross-examination, presentation of contrary evidence, and careful instruction on

5   the burden of proof" (emphasis added) (cleaned up)). It "satisfies the mandate of *Daubert*" that

6   Plaintiffs' experts sufficiently explained why it is reasonable to look at the impact of social media

7   use broadly on adolescent mental health. *In re Phenylpropanolamine (PPA) Prods. Liab. Litig.*,

8   289 F. Supp. 2d 1230, 1248 (W.D. Wash. 2003) (finding defendants did not demonstrate that

9   comparing like agents "fails to accord with acceptable methods and procedures of science").

10   First, Plaintiffs' experts explained that because there is considerable overlap in features

11   across the platforms it is reasonable to look at studies that measure social media use broadly. *See,*

12   *e.g.*, Ex. 17, Twenge JCCP Dep. 119:12-24 ("there's a good amount of overlap between the

13   platforms."); Ex. 10, Lembke Rep. §C.4 (describing addictive design features similar across

14   platforms); Ex. 32, Murray Rep. ¶¶315-62 (discussing similar harmful features across platforms);

15   Ex. 13, Mojtabai Rep. ¶¶253-305 (explaining many features are analogous across the platforms

16   (e.g., beautification features, "likes," comments, algorithmic features, ephemeral postings)); Ex. 5,

17   Mojtabai JCCP Dep. 709:24-11:5 (discussing commonalities across platforms); Ex. 15, Christakis

18   Rep. ¶¶44; 267 (Table 5) (identifying features and discussing the generalizability of the mechanism

19   of harm). Judge Kuhl agreed. *Soc. Media Cases*, 2025 WL 2807828, at *12, 40, 52.

20   Second, most users engage with multiple social media platforms, including Defendants',

21   which are the most popular, widely used and influential among youth. *See* Ex. 33, Pew Research

22   Center, *Teens, Social Media and Technology* (2024); Ex. 6, Mojtabai Reb. Rep. 10, ¶II.G.3 (noting

23   "average US adolescent uses more than 3 apps"). Similarly, many studies that have looked at both

24   screen time and social media time have established that a significant portion of adolescent

25   smartphone time is spent on social media. *See., e.g.*, Ex. 15, Christakis Rep. ¶¶85-88; Ex. 34,

26   Radesky, et al. (2023). Plaintiffs' experts have explained that it is therefore reasonable to

27   extrapolate findings from those screen-time use studies to social media use. Ex. 15, Christakis Rep.

28   ¶86 (concluding that given that "[o]ver 60% of the median total daily media time is spent on

1   TikTok, YouTube, Instagram, Snapchat, and Facebook", it is "not unreasonable to posit that even

2   studies that focus on the effects of *overall* "screen time" are driven in large part by usage of these

3   apps"); *see also Domingo ex rel. Domingo v. T.K.*, 289 F.3d 600, 606 (9th Cir. 2002) ("[S]tudies

4   involving similar but not identical situations may be helpful" so long as the expert "set[s] forth the

5   steps used to reach the conclusion that the research is applicable.").

6   Third, Defendants simply ignore the analyses offered by Plaintiffs' experts that *do*

7   specifically unpack the causal role of certain Defendants' platforms. For example, Dr. Lembke

8   devotes much of her report analyzing how each individual platform appeals to users through

9   increased access, quantity, potency, novelty, and uncertainty of social rewards. *See* Ex. 10, Lembke

10 Rep. 23, §C.4.a (Meta); *id*. 45, §C.4.c (Snap); *id*. 55, §C.4.e (YouTube); *id*. 66, §C.4.g (TikTok).

11 Dr. Mojtabai likewise dedicated a large portion of his report to discussing each of Defendants'

12 platforms and their features individually. Ex. 13, Mojtabai Rep. ¶¶253-305. He also offers a lengthy

13 list of studies in which harms were associated with use of specific platforms. *See* Ex. 6, Mojtabai

14 Reb. Rep. 10, ¶G.4 ("[I]n my opening report I refer to several studies that specifically examine

15 harms associated with specific platform use (e.g., (De Bérail et al., 2019; De Groote and Van

16 Ouytsel, 2022; Hristova and Lieberoth, 2021; Klobas et al., 2018; Mink and Szymanski, 2022;

17 Seekis and Kennedy, 2023; Sepas et al., 2024; Utz et al., 2015; van Essen and Van Ouytsel, 2023;

18 Vanherle et al., 2023).").

19   Notably, the approach taken by Plaintiffs' experts is consistent with that of leading health

20 authorities. For example, the U.S. Surgeon General issued an Advisory on Social Media and Youth

21 Mental Health which calls out "push notifications, autoplay, infinite scroll, quantifying and

22 displaying popularity (i.e., 'likes'), and algorithms" as harmful design features of social media writ

23 large. Ex. 25, U.S. Surgeon Gen. Advisory 2023, at 9; *see also* Ex. 35, American Academy of

24 Pediatrics ("AAP"), *Problematic Tech. Use* (2023) ("[M]any interactive technologies are

25 specifically designed to capture and hold a user's interest. It can be hard for children and teens to

26 overcome those design features."). It is also consistent with Defendants' own experts'

27 methodology. *See, e.g.*, Ex. 36, Becker Rep. 60, 65, 73-75 (discussing literature defining social

28 media broadly, including non-Defendant platforms (e.g. Twitter)). Defendant Snap's

1   epidemiologist, Dr. Buka, considered "social media use broadly" because doing so was "most

2   consistent and most relevant for the question that [he] sought to answer for the hypothesis that [he]

3   was testing, which is social media use is a cause of depressive disorder." Ex. 28, Buka Dep. 273:24-

4   74:14. Indeed, inconsistent with Defendants' arguments, *see* Mot. at 19, Dr. Buka considered

5   studies that included non-Defendant platforms (i.e., Twitter, Tumblr, LinkedIn, WhatsApp,

6   Telegram, and Viper). *See id.* 254:2-55:1. He explained it is "central to the whole field, that there's

7   different definitions from one study to the next" and it was his "rationale" to "cast a wide net"

8   because he did not find any studies that had to do with one platform (e.g., Telegram) that "had no

9   relevance for the other platforms." *Id.* 254:2-55:24.

10   In other words, it is reliable to extrapolate from the studies that look at social media broadly

11   to each of Defendants' platforms, as long as the expert sets forth the steps in extrapolating the

12   evidence. *See Domingo*, 289 F.3d at 606. This is what Plaintiffs' experts have done, and thus their

13   opinions "rest on more than simply [their] '*ipse dixit*'." *In re PPA*, 289 F. Supp. 2d at 1248 (quoting

14   *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 146 (1997)). Ultimately, Defendants' criticisms are not of

15   Plaintiffs' experts' methodology (the same methodology used by their experts); their criticisms are

16   actually directed at Plaintiffs' experts' conclusions. That is no basis for exclusion. *See Soc. Media*

17   *Cases*, 2025 WL 2807828, at *11.

18   The case Defendants rely on to support their argument (Mot. at 19, 24, 50, 88, 93; Prinstein

19   Mot. at 6), *Sanderson v. International Flavors and Fragrances, Inc.*, 950 F. Supp. 981, 984 (C.D.

20   Cal. 1996), is readily distinguishable. In *Sanderson*, the plaintiff alleged various sinus injuries (or

21   exacerbation of "existing injuries originally caused by exposure to formaldehyde in the past") after

22   being exposed to "countless different fragrance products, most of which she [could]n't identify."

23   *Id.* at 988. None of the plaintiff's experts could say to a reasonable medical probability that any

24   individual defendant product was a substantial contributing factor to her injury. *Id.* at 985. Her

25   experts were also not able testify "that *all* of the exposures and *all* fragrance products injured her

26   in the same manner and to the same degree, provided that she was exposed to a substantial amount

27   of that product." *Id.* at 987 (emphasis in original). That is not the case here, where there is a finite

28   number of platforms that have all been identified, and PI/SD Plaintiffs offer robust expert support

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1   for both general and specific causation that tie their injuries to Defendants' platforms. Moreover,

2   as Judge Kuhl recognized, *Sanderson* merely addressed a plaintiff's evidentiary burden of proof

3   and granted summary judgment because plaintiff's evidence was insufficient to create a triable

4   issue of material fact as to causation; it did not hold that every expert report or opinion must, by

5   itself, prove a plaintiff's entire case. *Soc. Media Cases*, 2025 WL 2807828, at *11 (citing

6   *Sanderson*); *id.* at 18, 39, 49 (same). "The fact that Defendant might argue that [expert]'s analysis,

7   without more, fails to show that any particular social media platform caused a particular type of

8   harm suffered by a certain Plaintiff is not a proper basis for excluding the testimony of a general

9   causation expert under *Sargon.* This point is highlighted by the fact that Defendants, in making this

10   argument, cite cases that involve substantive rulings by a court as to the sufficiency of allegations

11   or evidence, not the admissibility of an expert's opinion." *Id.*

12   In addition, the tort-based causation standard set by *Sanderson* and used by Meta

13   throughout its motion to exclude State AG experts Hale, Zicherman, and Prinstein (Mot. at 87,

14   93; Prinstein Mot. at 6), is neither relevant nor applicable to the State AGs' consumer protection

15   claims of deception and unfairness. As this Court acknowledged, the State AGs' consumer

16   protection deception claims stem from allegations of Meta's "years long public campaign of

17   deception," by misleading and concealing from the public its knowledge of harms as to the "risks

18   of addiction and mental harms to minors". *See* ECF 1214 at 2. Similarly, this Court has

19   acknowledged the State AGs' unfairness claims are also consumer protection claims. *See* ECF

20   1214, at 50-52.

21   The claims are brought under State consumer protection statutes protecting consumers

22   against fraudulent and/or unfair practices. *See* 23-cv-05448, ECF 73-2, State AGs Compl., at 143-

23   45, 147-98. These claims do not sound in tort and accordingly, do not require the State AGs to

24   prove proximate cause to a specific injury, akin to the tort standard set forth in *Sanderson*. Indeed,

25   this Court has previously stated that "consumer-protection claims of unconscionability and

26   unfairness present a distinct legal framework as compared to products liability." *See* ECF 1214, at

27   25 n.21. Rather than conforming to a product liability or tort framework, to prove their deception

28   claims the State AGs must, at a basic level, show that Meta's statements or actions were likely to

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1   deceive members of the public. *See, e.g.*, *People v. Johnson & Johnson,* 77 Cal.App.5th 295, 310-

2   314 (Ct. Cal. App. 2022); *People v. Overstock.com, Inc.,* 12 Cal.App.5th 1064, 1078-79 (Cal. Ct.

3   App. 2017); *May Dept. Stores Co. v. State ex rel. Woodard*, 863 P.2d 967, 970-71 (Colo. 1993);

4   *Stevens v. Motorists Mut. Ins. Co.*, 759 S.W.2d 819, 820 (Ky. 1988); *Fenwick v. Kay Amer. Jeep,*

5   *Inc*., 72 *N.J.* 372, 376- 377 (1977). Similarly, the State AGs' unfairness consumer protection

6   claims also do not fall under a tort liability framework. The State AGs must instead show that

7   Meta engaged in unfair, unconscionable, deceptive and/or misleading conduct. *See, e.g.,* Cal. Bus.

8   Code 17200; CCPA 6-1-105(rrr); Conn. Gen. Stat. § 42-110b(a); KRS 367.170; N.J. Stat. Ann. §

9   56:8-2.

10   **5.   Plaintiffs' experts' consideration of company documents is proper.**

11   An expert's reliance on company documents is appropriate where they are used to "develop

12   and reinforce [the expert's] opinions," as Plaintiffs' experts did here. *In re C. R. Bard, Inc.*, 2018

13   WL 4220602, at *4.[7] This is because internal company "documents are factual evidence in the case,

14   and experts clearly are permitted to take factual evidence into account." *In Re: Bard IVC Filters*

15   *Prod. Liab. Litig.*, 2017 WL 6554163, at *2 (D. Ariz. Dec. 22, 2017); *see also* Fed. R. Evid. 703

16   ("An expert may base an opinion on facts or data in the case that the expert has been made aware

17   of or personally observed.").

18   Further, expert narrative testimony is permissible where, as here, the documents and other

19   information the expert is reviewing are complicated, voluminous, and/or involve scientific or

20   technical data such that a summary would be helpful to the trier of fact in understanding the

21   evidence. *See In re Lipitor (Atorvastatin Calcium) Mktg., Sales Pracs. & Prod. Liab. Litig.*, 2016

22   WL 2940784, at *4 (D.S.C. May 6, 2016) (finding "expert narrative testimony is entirely

23   permissible in particular circumstances . . .[h]owever, such questions are not the province of Rule

24   702 and *Daubert*. They are issues for the Court to take up in the context of trial." (cleaned up)).

25   Nor is there any requirement that an expert routinely review internal company documents as part

26   ─────────────

27   [7] *See also Baker v. SeaWorld Ent., Inc.* 423 F. Supp. 3d 878, 905 (S.D. Cal. 2019) ("[the expert's] use of internal information, as one factor in his analysis, does not justify exclusion of his testimony"); *Zetz v. Bos. Sci.* 644 F. Supp. 3d 684, 703 (E.D. Cal. 2022) (holding that expert "may

28   testify about his review of Defendant's corporate documents… [to] explain[] the basis for his opinions").

1   of their academic research outside of litigation in order to rely on them. *Avila v. Ford Motor Co.*,

2   2025 WL 2538722, at *3 (N.D. Cal. Aug. 22, 2025) (Pitts, J.) (rejecting defendant's challenge to

3   expert's qualifications to review internal corporate documents, because "'lack of particularized

4   expertise goes to the weight accorded [the expert's] testimony, not the admissibility'" (quoting

5   *United States v. Garcia*, 7 F.3d 885, 889 (9th Cir. 1993))).

6   To avoid these well-established principles, Defendants contort Plaintiffs' experts'

7   testimony to claim they are using Defendants' internal documents to either regurgitate evidence

8   (Mot. at 13 (Christakis), 20 (Cingel), 25 (Goldfield)), or opine on the companies' state of mind,

9   knowledge, motivations, or intent (*id.* at 26 (Goldfield), 33-34 (Lembke), 58 (Telzer)). Not so.

10   Plaintiffs' experts are "articulat[ing] the factual underpinning upon which [they] base[]s [their]

11   opinion[s]." *Ohio State Troopers Ass'n, Inc. v. Point Blank Enters., Inc.*, 2020 WL 1666763, at *15

12   (S.D. Fla. Apr. 3, 2020) (internal quotations omitted) (finding expert did more than just provide

13   improper factual narrative, excluding only testimony that contained improper narrative); *Neo4j,*

14   *Inc. v. PureThink, LLC*, 2023 WL 7093805, at *7 (N.D. Cal. Oct. 25, 2023) (Davila, J.) (excluding

15   only testimony on company's view "without proper attribution or foundation"); *see also* Jan. 26,

16   2024 CMC Tr. 37:18-38:1 (the Court stating that "[D]efendants' own admissions, . . . include[ing]

17   internal reports assessing the relationship between product use and youth addiction and external

18   comments, . . . [and] whistleblower evidence . . . those admissions will matter, because these

19   particular defendants in this particular kind of case had more information than anybody else. They,

20   themselves, are the experts."). In any event, these objections are not grounds for exclusion and

21   should be reserved for trial. *See, e.g.*, *In re Juul Labs, Inc. Mktg., Sales Pracs. & Prods. Liab. Litig.*,

22   2022 WL 1814440, at *14 (N.D. Cal. June 2, 2022) (Orrick, J.) ("Generally, 'state of mind' and

23   'intent' objections are better ruled on at trial: the context of the testimony and the purposes for

24   which it is offered are critical."); *In re Bard IVC Filters Prods. Liab. Litig.*, 2017 WL 6523833, at

25   *8 (D. Ariz. Dec. 21, 2017) ("Defendants may object at trial if [expert] begins simply regurgitating

26   facts instead of using relevant facts to support for [sic] his expert opinions.").[8] The Court should

27   _____

28   [8] *Sec. & Exch. Comm'n v. Cornerstone Acquisition & Mgmt. Co. LLC*, 2025 WL 276318, at *14 (S.D. Cal. Jan. 23, 2025) ("[A]n objection to the narrative nature of testimony [] is properly asserted

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1   reject Defendants' arguments that Plaintiffs' experts' reliance on internal company documents

2   should be wholesale excluded.

B.   Expert-Specific Arguments

4   The PI/SD Plaintiffs proffer general causation expert testimony from Drs. Dimitri

5   Christakis, Drew Cingel, Gary Goldfield, Anna Lembke, Ramin Mojtabai, Eva Telzer, and Sharon

6   Hoover (SD-only). The AGs proffer general causation testimony from Lauren Hale, Bradley

7   Zicherman, and Mitch Prinstein. All Plaintiff groups proffer general causation expert testimony

8   from Dr. Jean Twenge and non-retained expert Mr. Arturo Béjar. For the reasons stated herein,

9   their testimony is admissible and Defendants' motion should be denied.

1.   Dr. Christakis's testimony is admissible.

11 Plaintiffs offer Dr. Dimitri Christakis, an experienced pediatrician and epidemiologist, to

12 help the jury understand how social media use by children and adolescents increases their risks of

13 certain harms. Ex. 15, Christakis Rep. ¶1-16, Ex. A. Dr. Christakis has clinical experience treating

14 and diagnosing children and adolescents who have suffered various mental health harms, including

15 those relating to social media use. *Id* ¶19.

a.   Dr. Christakis's opinions do not rest on third-party content.

17 As with all experts, Defendants first argue that Dr. Christakis's report is excludable under

18 Section 230 and the First Amendment because (they claim) his causation analysis "impermissibly

19 rel[ies] on content and publishing activity" and "he offers no reliable methodology for

20 disentangling harms caused by exposure to third-party content and publishing activity from any

21 alleged harm caused by Defendants' non-publishing features." Mot. at 8-10. Plaintiffs explain in

22 their Section 230 Brief why this argument is incorrect as a general matter. The Court, moreover,

23 has already ruled that Section 230 does not "immunize" *any* features (or the platforms' design as a

24 whole) under a failure to warn theory. ECF 1267, at 14. As such, it is not dispositive that Dr.

25 Christakis has not quantified the percentage of harm attributable to each individual platform feature

26 in the manner Defendants suggest. Mot. at 8-9.

27 _____

28 at trial" and "is not a proper objection to an *expert report*, that, itself, will not be placed into
    evidence, nor to a *Daubert* challenge" (internal citation omitted)).

To fit their Section 230 arguments, Defendants mischaracterize both Dr. Christakis's prior statements outside of litigation and his opinions here. Mot. at 9.[9] Dr. Christakis acknowledges that content plays a role, but opines that "all content on social media is only experienced within the context of features that have been engineered to increase engagement." Ex. 11, Christakis Reb. Rep. ¶19. In other words, content only reaches the viewer through design features, and these features substantially drive the harm. Ex. 15, Christakis Rep. ¶¶182-95; Ex. 11, Christakis Reb. Rep. ¶¶24-45. This is no different from what he has said prior to litigation.

As support for their argument that Dr. Christakis relies impermissibly on "content," Defendants offer two out-of-court statements they take out of context. The first is a viewpoint published in 2025 titled "Toward Defining Problematic Media Usage Patterns in Adolescents." Ex. 37. This is a viewpoint about all types of media usage; it is not solely focused on social media. *Id.* at E1 (noting digital experiences include "streaming, surfing, shopping, dating, messaging, and beyond"). Within that context, Dr. Christakis noted that "content matters as much – or perhaps more – than duration on devices," but that "time spent using digital media is not without cost insofar as it displaces time spent in the real world." *Id.* This statement about all digital media types is not inconsistent with Dr. Christakis opining that for a particular media type—here, social media—addictive design features are more important than content.

Dr. Christakis made a similar statement in a second viewpoint, published in 2019 and entitled "The Challenges of Defining and Studying 'Digital Addiction' in Children." This viewpoint is similarly about the role of all types of digital addiction, but only in children aged 5-11 years. Ex. 38, Christakis JCCP Dep. Ex. 35. It is thus neither about social media specifically nor about adolescents/teenagers. Notably, since this viewpoint, hundreds of articles have been published in the past six years that further inform Dr. Christakis's current opinions. *Id.* 445:3:12

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[9] Defendants also argue in a footnote that Dr. Christakis is an advocate who "has crafted his opinions to evade Section 230." Mot. at 10, n.11. They base this on partial quotes from a lengthy interview given by Dr. Christakis on the podcast "Leading Voices in Food." Mot. at Ex. 16. In the interview, Dr. Christakis is asked a question about "areas of public health" – such as opioids, tobacco, and vaping – and how judiciary and regulatory action helped turn the tide on related policy. Dr. Christakis, a public health academic, answered that in his opinion it is unlikely technology companies will make substantive action short of regulatory or litigation-driven reform. *Id.* As discussed above, the literature relied upon by Dr. Christakis and his clinical experience in treating harmed adolescents robustly support his causation opinions without the need for any "crafting."

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1   (stating he does not "agree with that statement anymore"). In any event, even if these prior

2   statements were contradictory to the opinions expressed in his report, they are not grounds for

3   exclusion. *Soc. Media Cases*, 2025 WL 2807828, at *33 (rejecting Defendants' argument finding

4   it "simply does not justify a finding that Christakis' methodologies are unreliable"); *see also In re*

5   *Roundup*, 713 F. Supp. 3d at 694 (finding inconsistencies between expert opinion and the basis for

6   that opinion may be "good fodder for cross-examination").

7   Moreover, Dr. Christakis amply supports his opinion that design features substantially drive

8   the harm to teens from social media. Ex. 15, Christakis Rep. ¶¶182-95; Ex. 11, Christakis Reb. Rep.

9   ¶¶24-45. Contrary to Defendants' assertion, Dr. Christakis relies on literature that supports his view

10   that social media platforms as a whole cause harm, *and* that specific features contribute to this harm

11   (e.g., likes and metrics contribute to social comparison; appearance and cosmetic filters increase

12   the risk of body dissatisfaction, dysmorphia, and disordered eating; and notifications disrupt sleep

13   and attention). *Id*. Dr. Christakis's opinions regarding the harms from social media are consistent

14   with and rely on statements by the APA and the U.S. Surgeon General that various design features

15   contribute to addictive/problematic use. Ex. 15, Christakis Rep. ¶¶99-101; Ex. 11, Christakis Reb.

16   Rep. ¶58, Tab. 2. Tellingly, Defendants' internal research considered by Dr. Christakis also shows

17   that specific features increase engagement and addictive behaviors. For example, YouTube found

18   that auto-play contributes to binge use of YouTube. Ex. 15, Christakis Rep. ¶210-11, ¶180; *see id*.

19   ¶¶134-468 (additional Defendant feature examples).

20   In short, Dr. Christakis has relied on sufficient data to support his opinion that features drive

21   the harm at issue, and Defendants' objection to this conclusion is not grounds for excluding him.

22   *See Krommenhock v. Post Foods LLC*, 334 F.R.D. 552, 583 (N.D. Cal. 2020) (Orrick, J.)

23   (arguments that experts have drawn "incorrect conclusions" or improperly excluded studies go to

24   weight, not admissibility (internal citation omitted)).

25   b.   **Dr. Christakis's opinions are reliable and well-supported, and he**
                           is qualified to give them.
26

27   Defendants mistakenly assert that Dr. Christakis "cannot bridge the gap" between the

28   research he cites and his opinions on Defendants' platform features. Mot. at 10-11. That argument

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1   rests on a distortion of his work and the false claim that the "literature [he] relies upon does not

2   conclude that the features at issue cause mental health harms." Mot. at 10. In fact, Dr. Christakis

3   relies on dozens of studies that analyze how certain design features impact mental health harms,

4   such as the experimental study Kleemans, et al. (2018) (Ex. 39), which found that manipulated

5   photos—via appearance filters—caused more negative body image, particularly in adolescent girls.

6   *Id.* This is just one example. *See* Ex. 15, Christakis Rep. ¶¶187-195; Ex. 11, Reb. Rep. ¶¶24-45;

7   Ex. 41, Christakis MDL Dep. Ex. 4; *see also* Ex. 42, Sherman (2016); Ex. 43, Neyman (2017); Ex.

8   44, Roffarello (2023); Ex. 45, Chen (2024); Ex. 46, van Essen (2023); Ex. 47, Dores (2025). The

9   publications considered by Dr. Christakis include various designs (experimental, longitudinal,

10 systematic reviews, etc.) that each offer support and insight into the causal connection between

11 social media features and various harms. This totality of the evidence approach is consistent with

12 both law and academic standards. *See supra* §A.2.

13   Defendants also erroneously argue that Dr. Christakis cannot testify about design features

14 that contribute to harms because he does not have "technical expertise" in this area. Mot. at 11-12.

15 Dr. Christakis is not a computer scientist, and he does not opine as to technical, source-code level

16 details on how features work. But Dr. Christakis has studied social media and its design features

17 for over a decade in his research lab at Seattle Children's Hospital. Ex. 15, Christakis Rep. Ex. A,

18 CV. This experience coupled with his extensive review of pertinent peer-reviewed literature

19 provides a sound basis for his conclusions. *See, e.g.*, *In re Heparin Prods. Liab. Litig.*, 803 F. Supp.

20 2d 712, 738 (N.D. Ohio 2011) ("Courts have admitted expert testimony as reliable where experts

21 extrapolate their opinions from their knowledge and experience combined with a review of the

22 relevant scientific literature."), *aff'd sub nom. Rodrigues v. Baxter Healthcare Corp.*, 567 F. App'x

23 359 (6th Cir. 2014).

24   Defendants' argument regarding a lack of consensus on social media addiction is equally

25 unavailing as a basis to limit Dr. Christakis's testimony. Mot. at 12-13; *see supra* §A.1. Defendants

26 cite to Dr. Christakis's use of the words "hotly debated" in a prior interview to argue that Dr.

27 Christakis acknowledges a lack of consensus regarding social media addiction. Mot. at 12.

28 Defendants notably omit that when questioned about this interview at deposition, Dr. Christakis

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1   explained "the *majority* of experts believe there is such an entity [i.e. social media addiction]" but

2   that there are "*some* people who believe it's in need of further study." Ex. 24, Christakis JCCP Dep.

3   275:19-276:9 (emphasis added). Snippets from "an informal discussion" devoid of context are

4   insufficient to exclude Dr. Christakis's opinions, and Defendants can cross-examine Dr. Christakis

5   about any inconsistent out-of-court statements at trial. *Soc. Media Cases*, 2025 WL 2807828, at

6   *33 ("Christakis' so-called 'consensus' statement is appropriately based on review of the relevant

7   literature, which has not been adequately challenged by Defendants.").

8   Defendants further mischaracterize Dr. Christakis's reliance on the AAP and the National

9   Eating Disorders Association ("NEDA"), claiming those citations fail to support "his consensus

10   claim" regarding "social media addiction." Mot. at 12. Yet a simple reading of Dr. Christakis's

11   report would illustrate that he cites to these sources as examples of "organizations recognize[ing]

12   that use of social media and its problematic and addictive usage is harming children and teenagers

13   today." Ex. 15, Christakis Rep. ¶101. For example, the AAP recognizes that "problematic

14   technology use" lies on a spectrum, and that "when young people experience problematic use of

15   social media, it's more of a broad range of challenges they experience; addictive behaviors are only

16   at the extreme end of that spectrum." Ex. 35, AAP, *Problematic Tech. Use* (emphasis omitted). Dr.

17   Christakis testified that he agrees, "there's a continuum", and "addictive behaviors are at the

18   extreme right of the continuum." Ex. 24, Christakis JCCP Dep. 290:5-25. This does not mean that

19   those who experience "problematic use" are not also harmed. Ex. 15, Christakis Rep. ¶¶11-18. The

20   NEDA source Defendants take issue with likewise supports Dr. Christakis's conclusion that social

21   media use is harming adolescents even though it does not use the terms "problematic" or

22   "addictive" use. Ex. 48, NEDA ("[S]tudies have found that social media use, particularly engaging

23   with appearance focused content that idealizes thin bodies, taking selfies and viewing and/or

24   comparing oneself to images of celebrities, peers or family increase body dissatisfaction and can

25   lead to disordered eating among both females and males, though rates are consistently higher for

26   females.").

27   As Dr. Christakis explained at his deposition, Defendants' objection is about semantics, not

28   substance. Ex. 24, Christakis JCCP Dep. 290:5-25. Some organizations, like AAP, refer to

1   "problematic" social media use, Ex. 35, while others, like the APA, refer to "social media

2   addiction," Ex. 9, and still others, like NEDA, discuss harmful social media use without these terms,

3   Ex. 48. *See also* Ex. 11, Christakis Reb. Rep. ¶58, Table 2 (linking to statements from eight

4   organizations acknowledging problematic social media use). Regardless of what term is used, these

5   sources support Dr. Christakis's conclusion that social media use is harming adolescents. Any

6   purported lack of consensus, moreover, is not a basis for exclusion. *See supra* §A.2; *see also Soc.*

7   *Media Cases*, 2025 WL 2807828, at *33 ("Defendants critique of the "consensus" statement is in

8   fact a disagreement with Christakis' *opinion,* not a demonstration that Christakis' methodologies

9   are unreliable.").

10   　　　Defendants also claim that Dr. Christakis lacks the expertise to offer opinions on "parental

11   controls, safety features, and age gating." Mot. at 13. But Dr. Christakis's opinions regarding

12   parental controls, safety features, and age verification are straightforward: he opines that

13   Defendants need to do a better job in designing these safety controls to minimize the risk of harm

14   from the platform and allow parents to more effectively manage their child's social media use. *See,*

15   *e.g.*, Ex. 15, Christakis Rep. ¶¶580-668. Dr. Christakis is qualified to offer this opinion based on

16   his career as a pediatrician and his work with the AAP helping to author guidelines directed to

17   parents regarding adolescent media usage. *Id.* ¶18; Ex. 49, Family Media Plan.

18   　　　Finally, Defendants erroneously contend that Dr. Christakis's opinions regarding internal

19   company studies, data, and research are "lay testimony" and should be excluded. Mot. at 13-14.

20   Dr. Christakis has over 25 years of professional experience in his role at the University of

21   Washington Hospital and Seattle Children's Hospital in reviewing corporate business documents,

22   including internal research, studies, safety data, and emails, to make business decisions regarding

23   resources and safety. Ex. 24, Christakis JCCP Dep. 45:22-47:7. He also has extensive experience

24   in reviewing industry studies as editor-in-chief of *JAMA Pediatrics*, and has been asked by industry

25   to serve on a data safety board. *Id*. With this background, Dr. Christakis reviewed Defendants'

26   internal documents to "develop and reinforce his opinions." *In re C. R. Bard*, 2018 WL 4220602,

27   at *4. Defendants have provided no basis to support their claim that this constitutes lay testimony

28   or warrants his exclusion.

2.   Dr. Cingel's testimony is admissible.

Dr. Drew Cingel, an associate professor of Communication at the University of California, Davis, has spent the last decade-plus studying the link between social media use and mental health problems in youth. He has authored over 56 peer-reviewed journal articles, approximately half of which focus on this specific topic, *id.* ¶¶23-24 & Ex. A, as well as 16 peer-reviewed invited articles, book chapters, and commentaries, *id* ¶25. Dr. Cingel has also worked with children's media companies, including Disney, on how to design media that support children's learning and mental health. *Id.* ¶30. Since 2024, he has served as Co-Editor of the journal *Media Psychology*, a role in which he reviews approximately 1,000 submissions per year in the areas of media, communication, and psychology. *Id.* ¶33. Finally, since 2016, he has directed the Human Development and Media Lab at UC Davis, *id.* ¶¶18-19, where he leads teams of graduate and undergraduate students who study how human development shapes media choices and influences perceptions and effects of media, primarily in the areas of moral development and mental health, *id.* ¶21-22. In short, he is eminently qualified, and Defendants' insistence to the contrary is baseless.

Dr. Cingel's expert opinions are informed by the above education, experience, and training, along with his in-depth literature review, and the analysis that he has conducted with his research teams. *Id.* ¶40. Dr. Cingel also reviewed documents produced in this case, as well as depositions and exhibits, relevant to his opinions. *Id.* ¶39. Among other things, he opines that Defendants' platforms take advantage of the adolescent brain, and that social media use contributes substantially to adverse mental health indicators for youth—including anxiety, depression, low self-esteem, affect, distraction, body negativity, suicide, and suicidal ideation. *See id.* ¶¶2-17.

Defendants recycle the same misguided arguments they raised against Dr. Cingel in the JCCP, which Judge Kuhl squarely rejected. *See Soc. Media Cases*, 2025 WL 2807828, at *26. Dr. Cingel is well-qualified, and he has used a reliable methodology similar to those used by various experts on both sides of this litigation.

        a.   Dr. Cingel's opinions do not run afoul of Section 230 or the First Amendment.

As generally explained above, *supra* §I, Defendants' argument that Dr. Cingel does not

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"disentangle" features that are protected by Section 230 or the First Amendment from those that are not fails. Dr. Cingel's opinions connect specific platform features to harms suffered by users. He devotes a section of his report to eight problematic features, explaining how the scientific literature and Defendants' documents show the harms that they cause. Ex. 50, Cingel Rep. ¶¶77-138 (addressing infinite scroll, autoplay, push notifications, recommender algorithms, social cues and peer feedback, beauty filters, ephemeral content, and location sharing). Defendants attack a small sub-set of these features (algorithms and likes (Mot. at 14)), while ignoring that the Court has held that Plaintiffs' failure-to-warn claim is viable as to all platform features and the platforms as a whole. ECF 1267 at 14.

b.   Dr. Cingel is well-qualified to give the opinions in his expert report.

Defendants argue that Dr. Cingel is not qualified to opine about how Defendants' platform designs affect the adolescent brain, a core part of his life's work. Again, Judge Kuhl has already rejected this attack, finding that "[t]he way in which a social media platform's design causes general mental health harms in minor users … is the very field in which Cingel has focused his studies for over a decade." *Soc. Media Cases*, 2025 WL 2807828, at *23.

Under Rule 702, an expert may be qualified by "knowledge, skill, experience, training, or education." Notably, experts may be qualified by their academic experience. *In re ConAgra Foods, Inc.*, 90 F. Supp. 3d 919, 953 (C.D. Cal. 2015) (holding that an expert was qualified based on "academic training and practical experience"). Dr. Cingel's lack of a psychology degree does not preclude him from testifying about how the adolescent brain reacts to social media when he has studied that exact issue for years. *See In re Silicone Gel Breast Implants Prods. Liab. Litig.*, 318 F. Supp. 2d 879, 889 (C.D. Cal. 2004) ("A lack of specialization affects the weight of the expert's testimony, not its admissibility.").

Defendants also attack Dr. Cingel's qualifications to offer "design" opinions (Opinions 12-16), but some of these opinions do not even mention "design" (Ex. 50, Cingel Rep. ¶¶13, 16) and others address how Defendants' "design choices"—i.e., their platform features—affect children (*id.* ¶¶14, 15, 17). Dr. Cingel is not opining from a technical standpoint on how Defendants should have

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1   designed their platforms; rather, he opines that certain design features are harmful to young people.

2   *Id.* ¶¶2-17. Again, this is the very subject he has spent years studying. *Soc. Media Cases*, 2025 WL

3   2807828, at *23.

4   c.   **Dr. Cingel's methodology in studying general causation is reliable.**

5

6   Defendants argue that Dr. Cingel cannot reliably connect their platforms to mental health

7   harms, Mot. at 17-19, incorrectly claiming that he "disregarded" the conclusions of study authors

8   in finding a causal connection. Mot. at 17. In reality, Dr. Cingel's report goes through the literature

9   in detail, discussing the strengths and limitations of numerous studies. *See* Ex. 50, Cingel Rep.

10   ¶¶139-223. First, he describes the cross-sectional studies that find an association between social

11   media use and youth mental health harms. *Id.* ¶¶139-74. These studies address a moment in time,

12   but they "are still valuable, as they can speak to the consistency of findings between social media

13   use and mental health outcomes." *Id.* ¶146. He then discusses longitudinal studies, which trace

14   outcomes over time, such that they "can speak to both causal effects and compare the individual to

15   themselves." *Id.* ¶¶175-79. He also digs into meta-analyses, which aggregate the results of

16   numerous studies to create high-powered results. *Id.* ¶¶180-93. Finally, he addresses ecological

17   momentary assessment studies, which involve sampling multiple times per day over a few weeks.

18   *Id.* ¶204-17. From all of this information, Dr. Cingel concludes that "social media is rather

19   consistently linked with multiple different aspects of adolescents' mental health." *Id.* ¶218. A

20   variety of studies support that conclusion. *Id.*

21   Defendants' argument is based on the false premise that an expert may not find causation

22   unless he relies on studies that in and of themselves find causation. As explained above, *supra* §A.2,

23   this is not the law. *See also Kennedy v. Collagen Corp.*, 161 F.3d 1226, 1229-30 (9th Cir. 1998)

24   (reversing decision to exclude expert who opined that Collagen caused plaintiff's illness, holding

25   that the fact that a cause-effect relationship "has not been conclusively established does not render

26   [the expert's] testimony inadmissible"); *Arneson v. Michigan Tissue Bank*, 2007 WL 4698986, at

27   *7 (D. Mont. Mar. 26, 2007) ("If … the referenced opinions are in conflict with, or lack support in,

28   pertinent medical literature, the Defendants will be able to minimize the weight of those opinions

1   through vigorous cross-examination.").

2   The Icelandic study, Thorisdottir et al. (2020), addressed in Defendants' motion is an

3   example. Mot. at 17-18. As the JCCP court recognized, Dr. Cingel cited this study "to support his

4   limited opinion that 'researchers have linked adolescent social media use to physical symptoms of

5   anxiety.'" *Soc. Media Cases*, 2025 WL 2807828, at *25. Thorisdottir et al. (2020) is one of many

6   on which Dr. Cingel relies. *See id.* He does not hold out that study, or any individual study, as

7   independently establishing causation.

8   Defendants' assertion that Dr. Cingel fails to determine causation on a Defendant-by-

9   Defendant basis fares no better, as explained above, *see supra* §A.4. *See Soc. Media Cases*, 2025

10   WL 2807828, at *25. When this was raised at his deposition, Dr. Cingel rattled off numerous

11   features that are common to all Defendants' platforms. Ex. 16, Cingel JCCP Dep. 10:2-15:25.

12   Further, his report goes into detail as to how Defendants' internal documents speak to the role of

13   their platforms in the youth mental health crisis. *See* Ex. 50, Cingel Rep. ¶226 (citing

14   META3047MDL-020-00251106 at -106 ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

15   ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮)); ¶244 (citing TIKTOK3047MDL-010-00329290 at -294

16   (▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮

17   ▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮▮)); ¶256 (citing

18   SNAP0078233 (▮▮▮▮▮▮▮▮▮▮▮▮▮)); ¶256 (citing GOOG-

19   3047MDL-00937887 at -914 (▮▮▮▮▮▮▮▮▮▮▮

20   ▮▮▮)). Defendants further chide Dr. Cingel for relying on a few studies that include non-

21   Defendant platforms in addition to the platforms at issue. But youth often use multiple social media

22   platforms, so it makes sense that they are studied in that manner. *See supra* §A.4. Regardless,

23   criticisms of the literature relied on by an expert are grounds for cross-examination, not for

24   exclusion. *Mullins v. Premier Nutrition Corp.*, 178 F. Supp. 3d 867, 904 (N.D. Cal. 2016) (Seeborg,

25   J.).

26   **d.**   **Dr. Cingel does not "regurgitate" company documents; they**

27   **confirm his opinions.**

     Defendants seek to shield themselves from their own damaging internal documents by

28

1   asking the Court to preclude Dr. Cingel from relying on them, ironically faulting him for citing too

2   much evidence. As explained above, *supra* §A.5, and as the JCCP court held, "Defendants, in

3   essence, argue that an expert must not be able to review the evidence that is directly relevant to the

4   case." *Soc. Media Cases*, 2025 WL 2807828, at *26. Defendants' argument presents a Catch-22.

5   Defendants at one and the same time assert that Dr. Cingel has failed to sufficiently address their

6   individual roles in harming children (*see, supra* §c), and that Dr. Cingel should not be permitted to

7   rely on documents that describe their roles in harming children.

8   Further, Defendants' self-serving argument that Dr. Cingel does not rely on their internal

9   company documents in his regular work is mislaid. As he testified, he "would love to" do so. Ex.

10 16, Cingel JCCP Dep. 236:3-6. Experts in his field have long sought this information, but

11 "companies are notoriously reticent about sharing this information with researchers." *Id.* 236:6-10.

12 Discovery has now confirmed what researchers have long suspected: Defendants' lack of

13 transparency—specifically, their refusal to make these internal studies publicly available—has

14 hindered independent research. *See* SD Pls.' Omni. Opp. Defendants cannot have it both ways: they

15 cannot conceal their internal data from the scientific community and then fault Dr. Cingel for

16 relying on it when it is disclosed (in litigation). Now that Dr. Cingel can do what many experts

17 wish they could and access these internal documents, he has incorporated them into his analysis for

18 this case.

19   These documents are not Dr. Cingel's primary resource, but they "are confirmatory of what

20 the external research says about social media's impact on adolescent mental health." Ex. 50, Cingel

21 Rep. ¶39. To the extent that Defendants criticize Dr. Cingel's use of company documents as

22 improper narrative testimony, that is an issue for trial, not for a *Daubert* motion. *Camenisch v.*

23 *Umpqua Bank*, 763 F. Supp. 3d 871, 882 (N.D. Cal. 2025) (Pitts, J.) (holding that "an objection to

24 the 'narrative' nature of testimony is an objection that is properly asserted at trial").

25   e.   **Dr. Cingel's use of "problematic use" is not a basis to exclude his testimony.**

26

27   Lastly, Defendants try to manufacture an issue by criticizing Dr. Cingel's use of certain

28 terms. Mot. 20-21. The term Dr. Cingel uses most frequently in his analysis is "problematic use,"

1   which is also Meta's preferred term, as opposed to "addiction." *See* Ex. 50, Cingel Rep. ¶¶86, 173

2   and n.178. Dr. Cingel defined the term in detail at his deposition. Ex. 16, Cingel JCCP Dep. 147:9-

3   23; *see supra* §A.1.

4   In attacking Dr. Cingel's testimony that one or two minutes of use could be problematic,

5   Defendants take his testimony out of context, continuing a pattern seen in the JCCP. *See Soc. Media*

6   *Cases*, 2025 WL 2807828, at *47. Dr. Cingel was disputing that there is a set threshold of time

7   spent that constitutes "problematic use," and he noted when asked that even a small amount of use

8   in the middle of the night could be problematic if it disturbs sleep. Ex. 16, Cingel JCCP Dep. 153:1-

9   24; *see also supra* §A.1 (explaining there is no threshold time requirement for addiction).

10   In the JCCP proceedings, Defendants' argument on this point was "not well taken"; this

11   Court should reach the same conclusion. *Soc. Media Cases*, 2025 WL 2807828, at *24.

3.   Dr. Goldfield's testimony is admissible.

13   Dr. Gary Goldfield holds a Ph.D. in health psychology from Carleton University in Ottawa,

14   Canada. Ex. 51, Goldfield Rep. ¶2. He currently works as a Senior Scientist at the Children's

15   Hospital of Eastern Ontario, and as a Professor of Pediatrics at the University of Ottawa, with cross-

16   appointments in the School of Psychology, the School of Human Kinetics, and the School of

17   Population Health. *Id.* Dr. Goldfield's research focuses on "psychosocial, behavioural and

18   biological determinants of eating disorders, obesity, and mental health in children and youth," with

19   an emphasis on the interaction between screen time and youth mental health. *Id.* ¶¶3, 5. Dr.

20   Goldfield has provided psychological care to students for 20 years, including care related to social

21   media use, and as an educator, he has observed the effects of social media use firsthand. *Id.* ¶165.

22   Defendants do not challenge Dr. Goldfield's expertise or qualifications to offer opinions in this

23   case.

24   Applying the same rigorous standards that he applies in his academic work, Dr. Goldfield's

25   report details his methodology supporting his opinions about the causal connection between social

26   media use and youth mental health harms. *Id.* ¶12. Dr. Goldfield conducted a systematic literature

27   review spanning the past five years, focusing on meta-analyses of observational and experimental

28   studies. *Id.* To further develop his causation opinions, Dr. Goldfield applied a Bradford-Hill

analysis based on his literature review, additional relevant research, and the studies cited in the meta-analyses he reviewed. *Id.* Dr. Goldfield's methodology is unassailable, and his opinions should not be excluded under *Daubert*.

a. Dr. Goldfield's analysis does not depend solely on content or publishing features.

Defendants argue that Dr. Goldfield's opinions run afoul of Section 230 because they do not reliably assign harm to features rather than content. Mot. at 22. As explained above, *supra* §I, this argument fails factually and legally. *See also Soc. Media Cases*, 2205 WL 2807828, at *10 (rejecting Defendants' argument that Dr. Goldfield's general causation testimony should be excluded under Section 230). Plaintiffs' experts are not required to opine that content has no role in Plaintiffs' harm; there is no "but-for" test under Section 230 such that opinions are invalidated if they consider, in part, the role of content in the causal chain. *See supra* §I. Thus, the fact that Dr. Goldfield acknowledged content is relevant "does not doom Goldfield's testimony." *Soc. Media Cases*, 2025 WL 2807828, at *10.

To fit their Section 230 arguments, Defendants selectively quote from Dr. Goldfield's Report and his depositions, misrepresenting the record. For example, Defendants cite references to media exposure and "fitspiration" and "thinspiration" in Dr. Goldfield's Report, claiming this is barred by Section 230. Mot. at 32. But Dr. Goldfield is discussing the effects of appearance filters, a "permissible" feature even under Defendants' faulty framing (Mot. at 8 n.10), which "expose adolescents to idealized and often digitally altered body images, encouraging unhealthy behaviors to attain unrealistic standards." Ex. 51, Goldfield Rep. ¶227; *see also id.* ¶206 (stating that social media's appearance filters are worse than traditional media exposure for body image and eating disorder issues); ¶368 (discussing "cosmetic surgery filters" as particularly harmful to children and those with a history of mental health and eating disorders); ¶391 (discussing Snap's "Lenses" feature as source of "Snapchat dysmorphia" and sexualization of youth); ¶446 (discussing YouTube's "Appearance Effects").

Dr. Goldfield also describes other design choices by Defendants that harm youth, including ones that do not implicate Section 230. For example, Dr. Goldfield identifies Defendants' failure

1   to implement effective safeguards, including lack of effective time limitations and parental controls,

2   as a driver of problematic social media use. *Id.* ¶68. Dr. Goldfield also discusses Defendants' lack

3   of effective age verification as a source of harm. *Id.* ¶¶381-84 (describing lack of age verification

4   and failure to remove from their platforms children who were under age 13); ¶¶414-22 (describing

5   Snap's ineffective age verification, allowing anyone to create an account by entering a birthday that

6   indicates they are over age 13); ¶¶437-38 (describing TikTok's complete lack of age verification

7   mechanism for the first year that it existed, and noting that even after that, it was easy for a child to

8   lie about their age to join the platform); ¶¶454-56 (describing that YouTube's age limit of age 13

9   as "effectively meaningless" because users of any age can access the YouTube Main platform

10   without logging in and YouTube's age verification relies only on users' self-declared ages).

11   Accordingly, Dr. Goldfield's testimony focuses on features—all of which are reachable under

12   Plaintiffs' failure to warn claims—as the source of harm to youth, not content.

13   Defendants' argument that Dr. Goldfield's opinion should be excluded because he testifies

14   that "immunized" features can cause harm likewise fails for the reasons articulated in Plaintiffs'

15   Section 230 Brief. Defendants again mischaracterize Dr. Goldfield's testimony as "admit[ting] that,

16   in his view, the barred features are responsible for most, if not all, of the alleged harm." Mot. at 23.

17   In reality, he explained that disabling use of features such as autoplay, infinite scroll, notifications,

18   and other similar features would make Defendants' platforms less addictive. Ex. 52, Goldfield

19   MDL Dep. 691:8-93:23. This does not mean that these features are the only source of harm, or that

20   "non-immunized" features contribute nothing to the equation. Regardless, Defendants' argument

21   again ignores that their failure-to-warn about all platform features (and their platforms as a whole)

22   is an actionable source of Plaintiffs' injuries. ECF 1267 at 14.

b.   Dr. Goldfield performed a reliable Bradford-Hill analysis.

24   In addition to a literature review, Dr. Goldfield applies the widely accepted Bradford-Hill

25   factors to evaluate the strength of the causal connection between social media use and youth mental

26   health harms. Ex. 51, Goldfield Rep. ¶¶12, 311-50. Summarizing the nine factors, Dr. Goldfield

27   concludes that the causal relationship between social media use and mental health harms "is

28   statistically significant, consistent across studies and populations, temporally ordered, shows a

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1   dose-response gradient, is biologically plausible, coherent with broader scientific understanding

2   and time trends, and supported by high-quality experimental evidence and analogical

3   comparisons." *Id.* ¶350.

4   Defendants attempt to cast Dr. Goldfield's Bradford-Hill analysis as "transdiagnostic,"

5   citing *In re Acetaminophen*, 707 F.3d 309, but as explained above, that case is readily

6   distinguishable. *See supra* §A.3; *see also Soc. Media Cases*, 2025 WL 2807828, *11-12 (explaining

7   at length why the experts' analyses in *Acetaminophen* are factually distinct from Dr. Goldfield's).[10]

8   In *Acetaminophen*, although the plaintiffs alleged only a narrow set of harms (ASD and ADHD

9   purportedly from prenatal exposure to Tylenol), their experts' expanded analysis swept in a broad

10   range of irrelevant harms, thereby obscuring instead of informing the causation inquiry. *Id.*

11   Rejecting Defendants' comparison, Judge Kuhl explained that unlike the narrow ASD and ADHD

12   claims at issue in *Acetaminophen*, Plaintiffs here "allege a wide range of mental and emotional

13   harm." *Soc. Media Cases*, 2025 WL 2807828, at *12. Thus, it was proper for Dr. Goldfield to

14   address those "wide range of mental harms for the purpose of [his] general causation analysis." *Id.*;

15   *see also* Ex. 51, Goldfield Rep. ¶313 (citing tables organized by harm at ¶¶86, 105, 118, 129, 140,

16   159, 169); ¶332 (noting research showing association between media use and severe mental health

17   issues, including depression, anxiety, body image issues, eating disorders, suicidality, and self-

18   harm); ¶310 (addressing how social comparison "exacerbate[s] depressive symptoms, anxiety, low

19   self-esteem, and disordered eating"); ¶316 (finding a strong association between social media use

20   and body image and suicide outcomes).

21   Defendants also attack Dr. Goldfield for failing to analyze under Bradford-Hill whether

22   each of Defendants' platforms can harm users. Mot. at 24. But Defendants fail to acknowledge that

23   the features are similar across all platforms, and thus the mechanism of harm is the same. *See supra*

24   §A.4; Ex. 53, Goldfield JCCP Dep. 342:18-43:7 ("Most of the literature pools the social media

25   platforms together, but the features are common to all of them, and there is actually no research to

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27   [10] In addition to misrepresenting Plaintiffs' experts' testimony, Defendants go as far as to
     misrepresent Judge Kuhl's findings with respect to the application of *Acetaminophen*. Mot. at 24
28   n.14. Judge Kuhl's conclusion that *Acetaminophen* is factually distinguishable had little to do with
     the fact that it applied federal law. *See Social Media Case*, 2025 WL 2807828, *11-12.

show that any one is far more harmful than the other."); Goldfield JCCP Dep. 486:4-14 ("Most of the apps share common features."). In any event, Dr. Goldfield does in fact evaluate each Defendants platform separately. Ex. 51, Goldfield Rep. ¶354 ("Meta targets children and youth with features that draw them to the platform and keep them there."); ¶¶389, 426, 441 (same for Snap, TikTok, and YouTube).

Finally, Defendants criticize Dr. Goldfield for being unfamiliar with some of the granular data and information regarding Defendants' platforms. Mot. at 25. Defendants do not explain the relevance of Dr. Goldfield remembering, for example, the average amount of time that users spend messaging with their friends versus using the Spotlight feature, or how YouTube notifications are delivered. Mot. at 35 n.15; Ex. 53, Goldfield JCCP Dep. 446:18-25. If anything, this is fodder for cross-examination. Dr. Goldfield's Bradford-Hill analysis has a strong foundation and should not be excluded under *Daubert*.

c. <u>Dr. Goldfield may rely on internal company documents to support his opinions.</u>

Dr. Goldfield's opinions primarily rest on peer-reviewed academic studies, but he also evaluated and considered Defendants' internal documents, data, and research "relevant to the issues addressed in this report." Ex. 51, Goldfield Rep. ¶38, ¶¶351-456 (detailing his analysis of Defendants' internal documents). These documents support Dr. Goldfield's causation opinions with Defendant-specific information, using Defendants' own findings about their platforms. These primary sources are consistent with Dr. Goldfield's scholarly sources and further establish that Defendants' platforms are harmful to teen mental health. Supplementing a scientific review with a review of a party's internal documents is entirely permissible, as explained above. *See supra* §A.5; *Soc. Media Cases*, 2025 WL 2807828, at *14 (finding it permissible for Dr. Goldfield "to make[ ] the point that Defendants' internal documents align with his own opinions"). The only limitation the JCCP court imposed was that Dr. Goldfield cannot testify that Defendants "knew or should have known" certain information, which Plaintiffs will not proffer here.[11]

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[11] Plaintiffs withdrew language from Dr. Goldfield's Report that Defendants knew or should have known that children and youth are more vulnerable to the mental health risks presented by their social media platforms. Plaintiffs served an amended expert report from Dr. Goldfield reflecting these modifications, which is attached here as Ex. 51.

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                         d.   **Dr. Goldfield's opinion about social media use and poor academic performance has a reliable basis.**

Dr. Goldfield opines that problematic social media use is associated with poorer school performance. Ex. 51, Goldfield Rep. ¶160. Several factors explain this association, including distraction, time spent on social media instead of schoolwork, and the negative mental health effects of excessive social media use. *Id.* Defendants attack two of the meta-analyses Dr. Goldfield considered, arguing that one meta-analysis shows a positive association between academic performance and social media use, and that the other relied entirely on correlational studies. Mot. at 27.

Defendants' argument mischaracterizes these meta-analyses and Dr. Goldfield's opinions. According to Dr. Goldfield, one meta-analysis, Salari et al., "found in their meta-analysis of 16 studies that social media *addiction* is significantly associated with lower academic performance." Ex. 51, Goldfield Rep. ¶159 (emphasis added). However, another meta-analysis (Kus et al.) "found that the effect of general [social media *use*] on academic performance was small, positive, but non-significant." *Id.* (emphasis added). Dr. Goldfield notes that even these small effects are meaningful at a population level, which is relevant here because there are many millions of young social media users. *Id.* Reconciling these meta-analyses, Dr. Goldfield opines that it is *problematic* social media use that drives lower academic performance; i.e., the Salari meta-analysis studied addiction, whereas Kus studied use generally. *Id.* ¶160. This opinion is supported by the fact that the Kus study highlighted potential benefits of social media use for academic purposes, such as accessing information, forming study groups, and sharing ideas, support, and resources. *Id.* ¶161. Dr. Goldfield also describes the limitations of the Salari meta-analysis, specifically that it included just one study from the United States and was specific to Facebook addiction. *Id.* ¶162. And while he acknowledges that studies showing correlation do not necessarily establish a causal relationship, Dr. Goldfield opines that the Salari findings about problematic social media use and lower academic performance are "remarkably similar to all other meta-analyses on problematic social media use and mental health harms" and "even the magnitude of the relationship is almost identical." Ex. 52, Goldfield JCCP Dep. 358:1-59:4. Dr. Goldfield's thorough and balanced

1   synopsis of the evidence on this topic does not warrant exclusion. To the extent that Defendants

2   seek to challenge his testimony by highlighting the limitations of the studies underpinning his

3   opinions, that is fodder for cross-examination, not grounds for exclusion. *Krommenhock*, 334

4   F.R.D. at 583; *see also Ringcentral, Inc. v. Nextiva, Inc.*, 2021 WL 12171869, at *4 (N.D. Cal. June

5   25, 2021) (Cousins, J.) ("The strength of [expert's] source studies goes to the weight of his opinion,

6   not admissibility.").

7   **4.   Dr. Lembke's testimony is admissible.**

8   Psychiatrist Dr. Anna Lembke has "more than twenty years of clinical experience and

9   research in addiction" and serves as Stanford's Chief of the Addiction Medicine Dual Diagnosis

10 Clinic. Ex. 10, Lembke Rep. ¶¶B.1, 22. She has real-world, clinical experience diagnosing and

11 treating behavioral addictions, including social media addiction. *Id*. ¶B.6. Dr. Lembke regularly

12 writes, teaches, and lectures on social media addiction, and has traveled globally to give

13 presentations to doctors, educators, policymakers, and parents about how excessive social media

14 use can harm youth mental health. *Id*. ¶¶B.4-5, 11-19. She has also testified before multiple

15 congressional committees and state legislatures on the topic. *Id*. ¶B.20. Defendants do not challenge

16 Dr. Lembke's qualifications.

17   Relying on her medical training, extensive clinical experience and research, and a review

18 of relevant scientific literature, Dr. Lembke opines that: (1) addiction is a brain disease evidenced

19 by continued, compulsive use of a substance or engagement in a behavior despite harmful

20 consequences; (2) social media addiction has been accepted and validated as a psychiatric condition

21 in the scientific community; (3) addictive social media exploit the need for human connection,

22 leading to brain and behavioral changes consistent with addiction, which young people are

23 especially vulnerable to; (4) Defendants' social media platforms exploit behavioral reward

24 mechanisms; and (5) social media addiction can adversely affect youth mental health. *Id*. §A. These

25 opinions are reliable and within her area of expertise.

26   Defendants seek to exclude the testimony of Dr. Lembke using the same arguments that

27 Judge Kuhl rejected in the JCCP. *See Soc. Media Cases*, 2025 WL 2807828, at *26-31. As they did

28 there, Defendants consistently mischaracterize Dr. Lembke's opinions. *Compare, e.g.,* Mot. at 28

1 ("Dr. Lembke seeks to opine that clinical addiction covers all types of 'behavior[s]' (Opinion 1)"),

2 *with* Ex. 10, Lembke Rep. ¶A.1 ("1. Addiction is a chronic, relapsing, and remitting brain disease

3 as evidenced by continued, compulsive use of a substance or engagement in a behavior despite

4 harmful consequences."). Defendants' arguments for exclusion fail.

5 <p style="text-align:center">a.   Dr. Lembke's opinions do not rest on third-party content.</p>

6 Defendants incorrectly claim that Dr. Lembke "made clear that the publication of [] third-

7 party content . . . drives [] mental health harms" Mot. at 31. To the contrary, Dr. Lembke opines

8 that Defendants' platforms are designed to exploit ease of access, larger quantity, higher potency,

9 novelty, and elements of uncertainty, creating an increased risk of addiction. Ex. 10, Lembke Rep.

10 §C.4. As she *repeatedly* testified at deposition, the driving force behind the mental health harms at

11 issue here are design features that encourage excessive and recurring time on the platforms. *See,*

12 *e.g.,* Ex. 1, Lembke JCCP Dep. 88:12-89:6, 89:18-25, 90:24-91:11, 158:5-9 (highlighting the harms

13 derive not solely from content, but from easy, frictionless access, infinite quantity, increased

14 potency, and uncertainty that create an addictive medium and recursive feedback loop). As

15 explained above, *supra* §I, and in Plaintiffs' Section 230 Brief, such testimony is not barred, as the

16 Court has ruled that Plaintiffs' failure to warn claims may be based on any and all features and the

17 platforms as a whole. *See* ECF 1267, at 14.[12]

18 Moreover, contrary to Defendants' assertions, Dr. Lembke's opinions do not rest solely, or

19 even primarily, on content. Defendants fixate on cherry-picked snippets of Dr. Lembke's testimony

20 regarding eating disorders and suicide, which are not the primary focus of her report. Ex. 1, Lembke

21 JCCP Dep. 230:11-25. She emphasized with regards to these and other harms that "addictive design

22 is a significant reason why the platforms are harmful" because Defendants' algorithms, for

23 example, create "recursive feedback loops" optimizing time spent. Ex. 10, Lembke Rep. ¶C.3.i.ii;

24 Ex. 1, Lembke JCCP Dep. 225:16-26:5 ("The addictive design/nature of the platform creates

25 recursive feedback loops that optimize for time spent and also push increasingly potent images to

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[12] Had Dr. Lembke tailored her opinions to the Court's Section 230 Order by only analyzing
27 "unprotected" features, Defendants surely would have claimed that her testimony was improperly
skewed for the purpose of litigation strategy. *See Soc. Media Cases*, 2025 WL 2807828, at *27
28 ("The fact that Lembke admits that third-party content causes harm supports the reliability of her
opinions, as it demonstrates that she considered the available evidence and literature.").

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the consumer . . . And although the content is relevant, *what's really most relevant is the platform design features that promoted the individual to consuming that kind of extreme content* and then rewarded them in that social community for [] social validation on that platform") (emphasis added); *id*. 231:4-32:2 (when asked how social media can lead to suicide, testifying that "the mechanism is primarily the same mechanism that we see when people get suicidal from using drugs and alcohol, that eventually with heavy, prolonged use, they become depressed, anxious, unable to stop even when they want to, and become despondent and [] hopeless and take their own lives"). As Dr. Lembke stated: "the content is relevant, but the content is not the most important thing. It's the design features that make the medium much more reinforcing than a natural reward would be." *Id.* 227:15-28:14.

<div align="center">

b.   Dr. Lembke's opinions are grounded in the science of addiction medicine.

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As explained above, *supra* §A.1, Dr. Lembke's opinions regarding the definition and diagnosis of social media addiction are rooted in the scientific literature and her own clinical experience. *See Hardeman*, 997 F.3d at 967 (finding an expert's methodology reliable based on "clinical experience and review[] of scientific literature").

Based on the DSM-5 criteria, Dr. Lembke offers a "short-hand way to remember" the phenomenology of addiction in the form of the "4 C's": control, compulsion, craving, and consequences. Ex. 10, Lembke Rep. ¶C.1.e. This framework is grounded in the scientific literature, *see, e.g.,* Ex. 54 at 37 (discussing scientific authorities' defining addiction as "characterized by behaviors that include one or more of . . .the '4 Cs'") (cleaned up); Ex. 55 at 661-62 (testifying that the "hallmarks of the criteria for being diagnosed with addiction can briefly be summarized as the four Cs"), and courts have previously admitted it as proper expert testimony.[13] Dr. Lembke explains that "the diagnostic criteria for a substance use disorder or gambling disorder or social media addiction or social media use disorder are all more similar than not. We're looking at the same basic phenomenology. It's just that the drug of choice is different." Ex. 1, Lembke JCCP Dep. 188:24-

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[13] Dr. Lembke's testimony in the opioids litigations also rested on the "4 C" addiction framework, *see* Ex. 1, Lembke JCCP Dep. 63:1-8, and was admitted there. *See, e.g., City & Cnty. of San Francisco v. Purdue Pharma L.P.,* 2022 WL 22837828, at *1 (N.D. Cal. May 6, 2022).

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1   89:11.

2   Just as in the JCCP, Defendants offer hyperbolic examples and misrepresentations of Dr.

3   Lembke's testimony in claiming that her "4 C's" addiction framework is limitless. As an initial

4   matter, it is well-established that behaviors—even those that seem innocuous on their face—can be

5   addictive. *See* Ex. 7, Lembke Reb. Rep. ¶B.2.b (noting "overwhelming consensus in the addiction

6   medicine field that people can get addicted to behaviors," and that the DSM-5 and ICD-11 currently

7   recognize gambling and Internet gaming disorders, and are considering adding social media, food,

8   and sex addictions). Further, Dr. Lembke made clear that for any behavior, a diagnosis of addiction

9   would depend on "whether or not they were meeting [the] criteria, the four Cs, tolerance, [and]

10   withdrawal." Ex. 1, Lembke JCCP Dep. 87:13-22. As Judge Kuhl put it: "Lembke's opinions thus

11   cannot be characterized as including the belief that 'virtually any activity that causes pleasure while

12   leading to a mood change or spending time away from others rises to the level of an addiction.'"

13   *Soc. Media Cases*, 2025 WL 2807828, at *30.

14   Dr. Lembke also explained that "there is no brain scan or blood test to diagnose addiction.

15   We base it on phenomenology, [] patterns of behavior that are highly recognizable and highly

16   consistent with the same patterns of behavior that we see when people get addicted to drugs and

17   alcohol." Ex. 1, Lembke JCCP Dep. 118:19-19:13. Scientific literature shows that social connection

18   activates the brain's reward pathway and releases dopamine—a mechanism that Defendants' own

19   experts recognize. *See* Ex. 56, Auerbach Rep. ¶27 ("This pursuit of social relationships engages

20   reward-related brain activity (e.g. striatum) and the dopamine system"). But nothing in the science

21   requires comparison of the amount of dopamine released through use of social media versus other

22   behaviors or activities to establish that social media can be addictive. *See* Ex. 1, Lembke JCCP

23   Dep. 142:4-10 (explaining that it would be "very difficult" to design a study comparing dopamine

24   release from social media versus social interaction in person due to the impracticality of

25   "interact[ing] with a person in an fMRI machine."); *see also Soc. Media Cases*, 2025 WL 2807828,

26   at *30 ("It is not necessary for Lembke to have relied on a non-existent study that employed brain-

27   imaging technology to measure the release of dopamine in an individual's brain during his/her use

28   of social media platforms."). Because there is no "magic amount" of dopamine that qualifies as

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1   addiction, diagnosis is accomplished through assessment of the "4 C's"—maladaptive patterns of

2   use, with or without tolerance and withdrawal. Ex. 10, Lembke Rep. §C.1, ¶C.2.b.iii. In other

3   words, Defendants' arguments are nothing more than artificial hurdles they have erected for Dr.

4   Lembke to clear without any grounding in addiction science.

5   c.   **Dr. Lembke's reliance on Defendants' documents is valid.**

6   Dr. Lembke is qualified to rely on internal corporate documents. Though "an expert is not

7   categorically precluded from examining and testifying as to a defendants' internal documents

8   simply because the expert is not an expert in 'internal company documents'," *see Soc. Media Cases*,

9   2025 WL 2807828, at *30, Dr. Lembke *does* have such expertise: she co-authored a peer-reviewed

10   article analyzing opioid industry documents "using established methods from prior research on

11   tobacco industry documents." Ex. 57, Gupta, et al. (2024). Dr. Lembke also has experience relying

12   on internal corporate documents as a testifying expert. *See, e.g.*, *In re Nat'l Prescription Opiate*

13   *Litig.*, 2021 WL 4243084, at *7 (N.D. Ohio Sept. 17, 2021) ("Dr. Lembke's review of discovery

14   produced in this MDL regarding the [] Defendants' policies and procedures is refracted through the

15   lens of an expert in … addiction … – she is certainly not simply a 'lay person who read up' on the

16   subject." (internal citation and brackets omitted)). Contrary to Defendants' claims, Dr. Lembke is

17   not narrating Defendants' documents or offering opinions about Defendants' motive, intent, or state

18   of mind (Mot. at 33-34); instead she is permissibly testifying "about those documents relied upon

19   in forming [her] opinion[s]." *City of Huntington v. AmerisourceBergen Drug Corp.*, 2021 WL

20   1320716, at *4 (S.D.W. Va. Apr. 8, 2021). Specifically, Dr. Lembke considered Defendants'

21   documents through the lens of her addiction framework, explaining how Defendants "*druggified*"

22   the innate need for human connection "through the manipulation of addictive design features that

23   promote ease of access, frictionless overabundance, high potency, high novelty, and uncertainty,"

24   thereby lighting up the same reward pathways as drugs and alcohol. Ex. 7, Lembke Reb. Rep. §B.3

25   9 (emphasis in original); Ex. 10, Lembke Rep. §C.4; *see also Soc. Media Cases*, 2025 WL 2807828,

26   at *30 (recognizing that Dr. Lembke's opinion is that "Defendants' own documents *provide*

27   *evidence* that their social media products are addictive") (citing Lembke Rep. ¶A.4) (emphasis in

28   original)). As explained above, *supra* §A.5, this type of analysis is proper. *See e.g.*, *In re Juul*, 2022

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WL 1814440, at *4 (recognizing "experts' experience, review of relevant literature[], and review of [defendant's] own documents provide a reasoned and reliable basis" for their causation opinions).

Nor were the internal documents that Dr. Lembke relied upon "cherry-picked." Mot. at 33-34. Dr. Lembke selected documents to review based on a broad set of criteria for "any documents relating to social media addiction, problematic social media use, or any synonyms for those terms," "documents that spoke to the addictive design elements [of] 'access, quantity, potency, novelty, uncertainty,'" and "documents that spoke to the criteria on which we base the diagnosis of addiction[:] control use, impulsive use, craving, and continued use despite consequences, as well as tolerance and withdrawal." Ex. 1, Lembke JCCP Dep. 53:2-54:2; *contra In re Onglyza & Kombiglyze Prods. Liab. Litig.*, 93 F.4th 339, 347 (6th Cir. 2024) (affirming exclusion of expert who cherry-picked data by analogizing to a drug in a different class of drugs than the relevant class for the at-issue drug). It was proper to identify documents with content related to the terms and concepts that are the subject of her report. In fact, Dr. Lembke's criteria also encompassed documents claiming that Defendants' platforms were *not* addictive, which Dr. Lembke assesses through her addiction framework. *See, e.g.,* Ex. 10, Lembke Rep. §C.4.a.xii (analyzing Meta document ███████████████████████ as minimizing the harms of problematic Facebook use).

d.   Dr. Lembke's opinion regarding warnings is not untimely.

In Dr. Lembke's opening report, she notes that TikTok employees "never warned their youth consumers or their parents about the addictive potential of their products." Ex. 10, Lembke Rep. ¶C.4.h.v; *see also* Ex. 18, Lembke MDL Dep. 37:20-24, 39:10-17 (explaining that this "applies to all the defendants" and "impl[ies] that they should have warned"). Dr. Lembke made clear at her June 18 JCCP deposition—prior to Defendants' July 9 expert report disclosure deadline—that she was offering an opinion regarding warnings.[14] *See, e.g.,* Ex. 1, Lembke JCCP

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[14] Dr. Lembke's MDL report is nearly identical to her JCCP report used in her JCCP deposition. Ex. 1, Lembke JCCP Dep. 35:3-36:10; *see also* Ex. 18, Lembke MDL Dep. 198:4-18, 204:21-05:10 (explaining her reports for the Tennessee and New Mexico related actions likewise contain "[a]lmost no differences," confirming "substantively there were no differences").

1 Dep. 411:14-12:1. In her subsequent rebuttal report, she reiterated: "Given the known potential for

2 harm of social media to youth, Defendants should warn . . . about the risks, which include but are

3 not limited to addiction, depression, and suicidal ideation." She confirmed this opinion again at her

4 MDL deposition. *See, e.g.*, Ex. 18, Lembke MDL Dep. 45:1-9. Even if the scope of Dr. Lembke's

5 opinion regarding warnings was unclear in her opening report, these ensuing events put Defendants

6 on notice. Defendants thus do not and cannot claim prejudice from any supposedly untimely

7 disclosure. *See* Fed. R. Civ. P. 37(c)(1) ("If a party fails to provide information or identify a witness

8 as required by Rule 26(a) or (e), the party is not allowed to use that information or witness . . .

9 *unless the failure . . . is harmless*.") (emphasis added); *Collins v. United States*, 2023 WL 8113259,

10 at *4 (C.D. Cal. Nov. 22, 2023) (finding Rule 26 violation harmless where expert had "extensively

11 explained the opinions he intend[ed] to testify to in two depositions, and Defendants had an

12 opportunity to prepare for the second deposition and ask [the expert] questions on opinions that

13 were not disclosed in the initial report").

14   Defendants' attempt to portray Dr. Lembke's opinion as either improper legal conclusion,

15 or an irrelevant personal opinion, is also unavailing. Dr. Lembke applies her knowledge of and

16 experience with warnings on addictive products to conclude that Defendants should provide

17 warnings in order to reduce harm. *See, e.g.,* Ex. 18, Lembke MDL Dep. 34:8-17, 45:18-46:5; *see*

18 *In re Juul*, 2022 WL 1814440, at *15 (noting that "[g]enerally, expert testimony on adequacy of

19 warnings is a permissible topic for expert input and helpful to the jury").

20   **5.   Dr. Mojtabai's testimony is admissible.**

21   Plaintiffs' expert Dr. Ramin Mojtabai is a psychiatric epidemiologist who is board certified

22 in psychiatry and neurology and has over three decades of experience in mental health research,

23 epidemiology, and applied biostatistics. Ex. 13, Mojtabai Rep. ¶10; Ex. 5, Mojtabai JCCP Dep.

24 539:25-40:10, 695:15-18. Drawing from his expertise and review of the literature, which includes

25 a number of articles that he authored prior to this litigation, Dr. Mojtabai opines that social media

26 use is a substantial contributing factor to adverse mental health outcomes—including anxiety,

27 depression, body image disturbance, eating disorders, and suicidality. Ex. 13, Mojtabai Rep. ¶¶6,

28 131-44, 177-84; *see also* Ex. 5, Mojtabai JCCP Dep. 53:22-24.

1   In reaching his opinions, Dr. Mojtabai employed the same rigorous methods he has used

2   throughout his academic and clinical career. Ex. 13, Mojtabai Rep. ¶¶17-21, 49, 65. He conducted

3   a literature review across a broad range of studies—experimental, longitudinal, cross-sectional,

4   ecological, and meta-analyses—examining the connection between social media use and mental

5   health harms. Additionally, he applied the Bradford-Hill guidelines, concluding that "the evidence

6   linking the use of social media with social media addiction, depression (including self-harm and

7   suicidality) and body image disturbance conforms to Hill's guidelines for a causal relationship."

8   Ex. 13, Mojtabai Rep. ¶352; Ex. 5, Mojtabai JCCP Dep. 82:23-83:4. These opinions are reliable

9   and within his area of expertise.

10   Defendants seek to exclude Dr. Mojtabai's testimony by distorting his methodology,

11   misrepresenting the scientific literature, and selectively parsing portions of his report and

12   deposition. Yet, as Judge Kuhl recently held, these same attacks "mischaracterize [Dr.] Mojtabai's

13   testimony" and fail to show any methodological unreliability. *Soc. Media Cases*, 2025 WL

14   2807828, at *38. Judge Kuhl rejected every argument Defendants reprise here, finding that Dr.

15   Mojtabai's methods are standard in epidemiology, that his opinions rest on reliable reasoning and

16   data, and that any disputes about his conclusions go to weight, not admissibility. *Id.* at 39-41.

17   Defendants' arguments for exclusion should likewise be rejected here.

18   **a.   Dr. Mojtabai opinions do not rest on third-party content.**

19   Dr. Mojtabai's opinions do not rely on or derive from any third-party content. As explained

20   in Plaintiffs' Section 230 Brief and above, *supra* §I, Defendants' arguments amount to an improper

21   attempt to graft a "but-for" causation test onto Section 230 and ignore the harms caused by their

22   failure to warn, and should therefore be denied. *See* ECF 1267, at 14.

23   Defendants mischaracterize Dr. Mojtabai's analysis by asserting that his opinions rest

24   primarily on studies examining the effects of content, overstating a single excerpt from his

25   testimony about social media being "intimately related" to content and disregarding the broader

26   context of his analysis. Mot. at 36. As Dr. Mojtabai clarified, "the majority of the results [were]

27   found in the studies *regardless of content that the participants were viewing*." Ex. 5, Mojtabai JCCP

28   Dep. 708:25-09:4 (emphasis added). Although some studies measure mood changes in response to

1   specific types of content, (*id.* 591:12-92:21), the majority examine participants' time spent on or

2   problematic use of social media and resulting mental health outcomes. *Id.* 591:12-92:21 (noting

3   that "some of the studies are as [Defendants] described them, but not all of them,); *id.* 556:23-57:9

4   (similar). As Judge Kuhl concluded, that single comment "does not doom" Dr. Mojtabai's

5   testimony, and his opinions properly address platform design features that foster excessive use and

6   adverse mental health outcomes. *Soc. Media Cases*, 2025 WL 2807828, at *37.

7   **b.   Dr. Mojtabai conducted a reliable literature review to reach his**
                            causal conclusions.

8

9   In challenging Dr. Mojtabai's methodology, Defendants repeat the same misguided

10   arguments Judge Kuhl previously rejected, attempting to portray his opinions as inconsistent with

11   his work outside of this litigation. To the contrary, Dr. Mojtabai employed the same methods he

12   uses in his academic research, applying them with the same rigor. Ex. 13, Mojtabai Rep. ¶49. In

13   his report, Dr. Mojtabai detailed the literature search and review process he undertook in

14   formulating his opinions (*id.* ¶¶50-52), which constitutes a proper and reliable methodology. *See*

15   *Soc. Media Cases*, 2025 WL 2807828, at *38 ("Defendants have not shown in the Mojtabai Motion

16   that relying on such a literature review is scientifically unreliable or different from what experts in

17   the field would normally do.").

18   Defendants mischaracterize both Dr. Mojtabai's testimony and his published work in

19   asserting that his causation analysis "improperly relies upon" cross-sectional studies. Mot. at 36–

20   38. In fact, Dr. Mojtabai's review of cross-sectional studies is fully consistent with his recognition

21   that such studies, standing alone, do not establish causation. Dr. Mojtabai has never claimed

22   otherwise. Rather, as he explained, his analysis considers the totality of the evidence, including

23   longitudinal, experimental, and cross-sectional studies, to evaluate the consistency of findings

24   across study designs. Ex. 5, Mojtabai JCCP Dep. 200:5-21.

25   Far from being methodologically suspect, Dr. Mojtabai's comprehensive approach reflects

26   standard scientific practice as explained above, *supra* §A.2. It aligns with accepted epidemiological

27   principles, where different study types provide insights relevant to causal inferences. *See Soc.*

28   *Media Cases*, 2025 WL 2807828, at *38 ("[C]ausation is a matter of scientific judgment and may

1   be based on numerous findings each of which alone may be insufficient to prove causation; experts

2   use experience and judgment to interpret epidemiological and other data to reach causation

3   opinions.") (citation omitted); *In re Roundup*, 390 F. Supp. 3d at 1116 ("Whether [an] agent causes

4   [an] outcome cannot be proven by epidemiological studies alone; an evaluation of causation

5   requires epidemiologists to exercise judgment about the import of those studies and to consider

6   them in context.").

7   **c.   Dr. Mojtabai conducted a proper Bradford-Hill analysis.**

8   Defendants contend that Dr. Mojtabai's Bradford-Hill analysis improperly "lumps

9   together" different psychiatric disorders and social media platforms. Mot. at 39. This argument is

10   both factually and legally incorrect. Dr. Mojtabai's report includes extensive sections analyzing

11   specific mental health harms—e.g., depression (Ex. 13, Mojtabai Rep. ¶¶133–76), body image

12   disturbance and eating disorders (¶¶185–215), sleep disturbance (¶¶236–41), and suicidality

13   (¶¶177–84). His Bradford-Hill assessment synthesizes those findings to evaluate general causation.

14   Addressing this very argument, Judge Kuhl recognized that Defendants' criticism is "best

15   understood as a critique of the conclusions that are produced by the Bradford Hill analysis, not the

16   methodology employed." *Soc. Media Cases*, 2025 WL 2807828, at *39; *see Daubert*, 509 U.S. at

17   595 (the court's gatekeeping function focuses "solely on [the expert's] principles and methodology,

18   not the conclusions that they generate").

19   Defendants' reliance on *In re Acetaminophen*, 707 F. Supp. 3d 309, is again misplaced. *See*

20   *supra* §§I, A.3, B.3.b. As Judge Kuhl found, Dr. Mojtabai's analysis is not akin to the

21   "transdiagnostic" analysis at issue in that case. *Soc. Media Cases*, 2025 WL 2807828, at *40

22   (rejecting Defendants' comparison, explaining that, unlike the narrow ASD and ADHD claims at

23   issue in *Acetaminophen*, Plaintiffs here "allege a wide range of mental and emotional harm"). It

24   would therefore make little sense to fault Dr. Mojtabai for addressing "a wide range of mental

25   harms for the purpose of the general causation analysis." *Id.*

26   Defendants' assertion that Dr. Mojtabai failed to analyze individual social media platforms

27   is equally incorrect. Mot. at 40. He testified that he familiarized himself "with the most important

28   features of each one of the platforms and studies that have specifically looked at those features."

1   Ex. 5, Mojtabai JCCP Dep. 609:16-20. Consistent with that testimony, he devoted a substantial

2   portion of his Report to discussing each Defendant's platform and its features individually. Ex. 13,

3   Mojtabai Rep. ¶¶253-305.

4   As explained above, *supra* §A.4, Dr. Mojtabai also explained why it is scientifically

5   appropriate to evaluate social media use more broadly. Many core features—e.g., beautification

6   features, "likes," comments, feeds—are analogous across platforms. Ex. 13, Mojtabai Rep. ¶¶253-

7   305; Ex. 5, Mojtabai JCCP Dep. 711:2-5. He explained that "there are many commonalities . . .

8   across the different platforms, justifying a global approach to social media." Ex. 13, Mojtabai Rep.

9   ¶305. Judge Kuhl agreed, finding that Defendants "failed to demonstrate that their social media

10 platforms are so different from each other that it would be scientifically unreliable to investigate

11 their mental health effects as a group." *Soc. Media Cases*, 2025 WL 2807828, at *40. Moreover,

12 most of the relevant research treats social media as a collective exposure because kids typically use

13 multiple platforms. Ex. 5, Mojtabai JCCP Dep. 712:16-22. As Dr. Mojtabai explained, "an average

14 US adolescent uses more than 3 apps. As such, separating the harmful effects of different apps that

15 adolescents use would be infeasible." Ex. 6, Mojtabai Reb. Rep. ¶II.G.2.

16   Defendants' final methodological objection—that Dr. Mojtabai improperly relies on studies

17 that do not assess "diagnosed psychiatric disorders"—is likewise unavailing. Mot. at 40-41. This

18 argument is contrary to accepted standards of research in the field. As explained above, *supra* §A.3,

19 Dr. Mojtabai's reliance on the peer-reviewed literature that measures self-reported symptoms is

20 reliable and not a basis for exclusion. Ultimately, any demand for platform- or harm-specific

21 parsing "can be addressed at trial through the introduction of competing evidence and through

22 cross-examination." *Soc. Media Cases*, 2025 WL 2807828, at *40.

d.   Dr. Mojtabai's opinions about social media addiction are reliable.

As explained above, *supra* §A.1, Dr. Mojtabai's opinions regarding the definition and

diagnosis of social media addiction are grounded in a robust and well-established body of scientific

literature and are scientifically sound. Dr. Mojtabai explained that "several questionnaires and

scales have been developed and validated to measure social media addiction; both diagnostic

1   criteria and addiction scales are extensively represented and widely accepted in the literature." Ex.

2   13, Mojtabai Rep. ¶101. His opinions are therefore not "wholly speculative or unfounded," but

3   grounded in accepted clinical practice and peer-reviewed research. *See Elosu v. Middlefork Ranch*

4   *Inc.*, 26 F.4th 1017, 1025 (9th Cir. 2022) (explaining that Rule 702 requires "foundation, not

5   corroboration," and that "while a court may reject wholly speculative or unfounded testimony, it

6   abuses its discretion if it overlooks relevant data submitted as the foundation of an expert's

7   remarks").

8   Dr. Mojtabai also directly refuted Defendants' suggestion that "social media addiction" or

9   "problematic social media use" lacks clinical validity merely because it is not yet listed in DSM.

10   Ex. 6, Mojtabai Reb. Rep. 4, ¶II.C.1-3. He explained that the DSM is an evolving diagnostic tool

11   and that social media addiction "may be in future versions of the DSM," likely based on criteria

12   similar to those for Internet Gaming Disorder. Ex. 5, Mojtabai JCCP Dep. 126:23-27:16; Ex. 6,

13   Mojtabai Reb. Rep. 4, ¶II.C.1-3. Judge Kuhl agreed, noting that the absence of a DSM classification

14   does not undermine the scientific reliability of Dr. Mojtabai's opinions. *Soc. Media Cases*, 2025

15   WL 2807828, at *41.

6.   Dr. Murray's testimony is admissible.

17   Dr. Murray is a physician and professor at University of California, Los Angeles (UCLA)

18   who has spent his career studying eating disorders and other mental health conditions in

19   adolescents. Ex. 32, Murray Rep. Ex. A, CV. His opinions are based upon his clinical experience,

20   a thorough review of the literature, and a review of Defendants' internal studies, data, and

21   documents. Ex. 30, Murray JCCP Dep. 558:5-23. In moving to exclude him, Defendants rehash

22   many of the same arguments previously made in the JCCP, disregarding Judge Kuhl's

23   admonishment about misrepresenting evidence. *Soc. Media Cases*, 2025 WL 2807828, at *30. They

24   also ignore Dr. Murray's Rebuttal Report, which directly addresses most of their criticisms with

25   citations to literature and provides an additional explanation of methodology, and his MDL

26   deposition, to which he brought a 435-page compilation of literature to provide ready references to

27   respond to Defendants' criticisms. For the reasons stated below, this motion should be denied.

28

a. Dr. Murray's opinions do not rest on content.

Defendants argue that Dr. Murray's report should be excluded under Section 230 and the First Amendment because his causation analysis "impermissibly rel[ies] on content and protected publishing features." Mot. at 43-44. Plaintiffs explain in their Section 230 Brief why this is incorrect and, as noted above, the Court has ruled that Section 230 does not "immunize" *any* features (or the platforms design as a whole) under a failure to warn theory. ECF 1267, at 14.

Defendants cherry-pick several partial quotes from Dr. Murray in an attempt to argue that he has failed to show features drive the harm. Mot. at 44. Dr. Murray's clearly testified, however, that most studies are content agnostic and find that use of social media—regardless of content consumed—leads to negative mental health impacts in adolescents. Ex. 30, Murray JCCP Dep. 433:2-11. He also testified in detail about the role of specific features. *See, e.g.*, *id*. 448:3-7 (discussing how his patients are encouraged "to use filters to look like somebody else," which "is harmful and arguably more harmful than viewing content without those same features."); *see also* Ex. 58, Murray MDL Dep. 264:17-65:16 (discussing infinite scroll and delivery of intermittent variable rewards as contributing to harm); *id*. 271:7-73:9 (discussing algorithms driving reward driven, addictive-like behavior; filters altering self-perception; comments and likes augmenting social comparison processes; and notifications driving FOMO). It is not dispositive that Dr. Murray did not slice and dice the record in the manner that Defendants desire; his opinion that a "review of the existing literature establishes a clear causal connection between certain design characteristics of social media and an increased risk of eating disorders and body dysmorphia" is well-rooted in the evidence. Ex. 32, Murray Rep. ¶6.

b. Dr. Murray's opinions are reliable and admissible.

Defendants take issue with which studies Dr. Murray reviewed and the conclusions he drew from them. Mot. at 44-46. Under *Daubert*, however, the focus is on the expert's methodology, not his conclusions. *In re Viagra,* 424 F. Supp. 3d 781, 792 (N.D. Cal. 2020) (Seeborg, J.) (a methodology is "appropriate" under *Daubert* when an expert applies their "education, training and experience to a comprehensive review of available medical literature"). In any event, Defendants' purportedly methodological challenges to Dr. Murray's literature review are unfounded.

1   For example, Defendants criticize Dr. Murray for considering cross-sectional studies as part

2   of his literature review. Mot. at 43-44. That criticism is baseless. As explained above, *supra* §A.2,

3   cross-sectional studies often form part of the evidence supporting causation in public health

4   (consider smoking and lung cancer, or lead poisoning in children and subsequent cognitive

5   deficits). It is thus not surprising that Defendants' own eating disorder expert, Dr. Schwartz, relied

6   upon cross-sectional data for opining about alternative causes. *See* Ex. 59, Murray Reb. Rep. ¶¶18-

7   22; Ex. 60, Schwartz Rep. ¶¶112, 119. Dr. Murray sufficiently explained why cross-sectional

8   studies are important to causation. Ex. 30, Murray JCCP Dep. 316:13-17:6 ("Even with cross-

9   sectional data, you can establish predictive conclusions . . . you can certainly use cross-sectional

10   data to inform meaningful opinions. And I do that in my clinical practice all the time"); *id.* 318:23-

11   19:4 ("[W]hen there's a confluence of many, many, many existing cross-sectional studies that have

12   applied different statistical methods, I believe you can form meaningful conclusions."").

13   Defendants' quoted references to singular study limitations do not undermine Dr. Murray's

14   methodology. *See In re Bair Hugger*, 9 F.4th at 779.

15   Nor does Defendants' argument regarding dose-response. Mot. at 45-46. Dr. Murray

16   testified that while there are various factors that should be considered to assess causation, including

17   dose-response, ultimately "one has to consider the entirety of the evidence base because the reality

18   is, is that every study has strengths and every study has limits." Ex. 30, Murray JCCP Dep. 327:19-

19   23. In doing just that, Dr. Murray in fact assessed dose-response, finding that "adolescents with

20   more social media accounts, and adolescents who spend more time on social media, are more likely

21   to endorse disordered eating cognitions and engage in disordered eating." Ex. 32, Murray Rep.

22   ¶155. He also noted that "[s]everal studies have illustrated a dose response effect…In one study of

23   over 1,700 young adults, a linear dose-response effect was evident, even after controlling for co-

24   variates thought to impact outcomes." *Id.* ¶233.

25   Defendants also argue that Dr. Murray improperly opines on all eating disorders as a group,

26   failing to perform a causation analysis for individual eating disorders. Mot. at 46-47. This conflates

27   Dr. Murray's review of literature discussing the relationship between social media use, eating

28   disorders, and body image issues in adolescents (*e.g.*, Ex. 32, Murray Rep. ¶¶153-55), with his

1   clinical diagnostic practice. These are two distinct methodologies: one is a literature review opining

2   on general causation; the other is a clinical diagnosis (akin to specific causation). Dr. Murray's

3   causal opinions based on his literature review are consistent with how academics conduct research

4   in the field. *See id.* ¶¶178-86 (citing professional organizations that discuss the connection between

5   social media use and eating disorders generally). It makes sense that scientific literature and

6   professional groups evaluate the link between social media and eating disorders as a group, because

7   they are often comorbid and patients move between eating disorders. Ex. 30, Murray JCCP Dep.

8   239:2-12; 240:1-5. Dr. Murray also explained that eating disorders exist on a spectrum, "all

9   characterized by central disturbances in feeding behavior." Ex. 58, Murray MDL Dep. 53:8-9. He

10   details the categories of eating disorders and the symptoms and characterizations of each, (Ex. 32,

11   Murray Rep. ¶¶46-55), and then analyzes numerous studies on the impact of social media use on

12   eating disorders, including reviewing "studies which included measures of the psychopathology of

13   each of those three eating disorders." Ex. 58, Murray MDL Dep. 455:16-19.

14   There is likewise no merit to Defendants' argument that Dr. Murray improperly relies on

15   studies that utilize self-report. Mot. at 48-49. As discussed above, *supra* §A.3, this argument is

16   inconsistent with scientific research and belied by Defendants' own experts' reliance on self-

17   reported tools and studies. Dr. Murray conducted a standard literature review and explained how

18   his methodology incorporated literature that reported validated measures associated with the mental

19   health harms he was studying. Ultimately, "[a]ny study which indexes the type, duration and

20   intensity of social media use among children and adolescents, AND indexes the association

21   between such social media use and body image, eating disorder and mental health-related outcomes

22   were [sic] considered." Ex. 32, Murray Rep. ¶38. Moreover, at deposition, Dr. Murray provided

23   specific examples of studies that did consider diagnosed eating disorder outcomes. Ex. 61, Murray

24   MDL Dep. Ex. 5; Ex. 58, Murray MDL Dep. 219-32. Finally, in Dr. Murray's rebuttal report, he

25   included longitudinal study findings showing that body dissatisfaction at age 13, 14, 15, and 16

26   years significantly predicted first onset of a clinically-diagnosed DSM-5 eating disorder within 4

27   years of assessment. Ex. 59, Murray Reb. Rep. ¶¶39-41. In other words, Dr. Murray opines

28   consistent with published science that increased self-reported symptoms also increase the

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likelihood of having a diagnosed eating disorder. *See, e.g.*, Ex. 61, Murray MDL Dep. Ex. 5, 347-407.

Defendants next accuse Dr. Murray of ignoring studies contrary to his position on the basis that he was unable to recall, many hours into his JCCP deposition, specific studies that found no association between symptoms of eating disorders and social media use from the over 600 articles he reviewed. Ex. 30, Murray JCCP Dep. 452:5-21 (noting he was "aware of varying effect sizes" and believes he included in this report "all the most relevant data"). Dr. Murray testified that he "considered all literature, including the literature that found no or limited associations to harm." *Id*. 559:19-60:2. Importantly, at Dr. Murray's MDL deposition, he identified several studies with negative findings that he testified he considered in forming his opinions. Ex. 58, Murray MDL Dep. 319:14-21:16 (Mot. at Ex. 52-55 (exemplar negative studies considered)).

c.   **Dr. Murray's causation opinions connect harms to each Defendant's platforms and features.**

Finally, Defendants erroneously contend that Dr. Murray's opinions should be excluded because he did not conduct a Defendant-by-Defendant, feature-by-feature analysis. Mot. at 50. Dr. Murray testified that his "opinion is that the defendant platforms cause harm because there are *many* features which are harmful." Ex. 58, Murray MDL Dep. 261:10-20 (emphasis added). As explained above, *supra* §A.4, in reaching that opinion, Dr. Murray properly extrapolated from the research measuring social media use broadly to each of Defendants' platforms. Dr. Murray also considered studies examining each platform and/or the relevant features individually, as well as internal studies and data on each platform. *See id*. 204:4-07:25 (testifying that he brought a notebook, Ex. 5, of exemplar studies to the deposition on Defendants' platforms and features); *see also* Ex. 32, Murray Rep. ¶¶316-32 (Meta re Facebook and Instagram); ¶¶333-39 (TikTok); ¶¶340-46 (Snap); ¶¶347-62 (YouTube). In sum, Defendants have no basis to now argue that Dr. Murray has failed to appropriately consider literature regarding each of Defendants' platforms and their features.

7.   **Dr. Telzer's testimony is admissible.**

Dr. Eva Telzer, a professor of psychology and neuroscience at the University of North Carolina (UNC) at Chapel Hill opines about the impact of social media use on adolescent brain

1   development and social media use. Ex. 62, Telzer Rep. ¶¶3-16, Rep. Ex. A, CV. In reaching her

2   opinions, Dr. Telzer combines her educational background and professional experience with a

3   review of the literature and relevant internal company documents. *Id.* ¶1. In seeking to exclude her

4   opinion, Defendants rely upon mischaracterization and selective, out-of-context citation to her

5   methodology, research, and opinions. Their arguments are not grounds for exclusion under *Daubert*

6   and are at best fodder for cross-examination.

7   **a.   Dr. Telzer's opinions do not rest on content.**

8   As with all experts, Defendants first argue that Dr. Telzer's opinions should be excluded

9   under Section 230 and the First Amendment because her causation analysis fails to establish

10 "whether non-publishing features of Defendants' platforms are capable of causing harm

11 independent of the protected publishing features and content on the platforms." Mot. at 51-52.

12 Plaintiffs address this argument generally in their Section 230 Brief and above, *see supra* §I.

13   Defendants' specific arguments with respect to Dr. Telzer ignore her reports, which include

14 sections on features, including ones entitled "Unique Features of the Social Media Experience" and

15 "Design Features of the Social Media Platforms are Driving Causation." Ex. 62, Telzer Rep. ¶¶123-

16 38; Ex. 63, Telzer Reb. Rep. ¶¶41-67. With extensive citations to the literature, Dr. Telzer walks

17 through how "social media platforms are engineered in a way that maximizes engagement through

18 features such as infinite scroll, algorithmic content delivery, intermittent rewards (likes and

19 notifications), and public performance metrics (follower counts, likes, comments)." *Id.*; Ex. 42,

20 Sherman (2016); Ex. 64, Tiggemann (2018); Ex. 39, Kleemans (2018); Ex. 65, Su (2021).

21   The literature considered by Dr. Telzer is largely agnostic to the content displayed on social

22 media. For example, in Sherman (2016), a study focused on the "like" button, the content was the

23 same – the only difference affecting participant response was whether there were more or less

24 "likes" on the post. Other neuroimaging studies have established that there need not be "content"

25 for the adolescent brain to respond to an anticipated reward delivered digitally. Ex. 63, Telzer Reb.

26 Rep. ¶42-43; *see, e.g.*, Ex. 66, Maza (2023); *see also Soc. Media Cases*, 2025 WL 2807828, at *47

27 (finding the point of Maza (2023) "was to consider the effect of social reaction feedback as such,

28 regardless of content"). Based on this research, Dr. Telzer opines that the brain is largely agnostic

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1   to the content; it is the anticipation of reward and social validation that drives engagement and

2   further compulsive use. *Id*. ¶¶43-46. In other words, "[i]t's the features of social media that make

3   it more problematic." Ex. 2, Telzer JCCP Dep. 158:9-10. This distinction is crucial—platform

4   design, not just what is being posted, is what makes social media so neurobiologically compelling.

5   *Id*.

6   As Judge Kuhl recognized, "[t]he fact Telzer has referred to the word "content" in her

7   testimony . . . or that she has *considered* literature that primarily analyzes the effect of content does

8   not mean she cannot provide an opinion regarding how design features themselves lead to harm

9   *regardless* of content." *Soc. Media Cases*, 2025 WL 2807828, at *46 (emphasis in original).

10   Plaintiffs, moreover, do not need to artificially parse the various harms from each feature,

11   particularly under their failure to warn claim, and particularly in cases brought by school districts

12   who are dealing with the overall fallout from students' addiction to Defendants' platforms.

13   Moreover, evidence of any "immunized" feature can still be relevant to establish harm from

14   actionable conduct.

b.   Dr. Telzer's opinions about causation are well-supported.

16   Defendants claim that Dr. Telzer applies "inconsistent standards" for causation in this case

17   compared to in her published research and prior statements (Mot. at 53). This is a baseless argument

18   based upon 5-6 words Defendants take from the limitation sections of her lengthy peer-reviewed

19   publications or from lengthy interviews. *Id*.; s*ee also Soc. Media Cases*, 2025 WL 2807828, at *47

20   ("Defendants quoted Telzer as saying something in an interview that she did not say; Defendants

21   explanation that the phrase is included in Telzer's deposition does not change that fact. Again, the

22   court points out that such mischaracterizations of the record do not inspire confidence in

23   Defendants' credibility on these questions.").

24   As an initial matter, even if Dr. Telzer's statements are inconsistent—and they are not—

25   they are grounds for cross-examination, not exclusion. *See, e.g.*, *Soc. Media Cases*, 2025 WL

26   2807828, at *47 (finding any "contradictions" can be raised at trial but do not undermine the

27   methodology used for Dr. Telzer's opinions in this case); *see also In re Roundup*, 713 F. Supp. 3d

28   at 694 (inconsistencies between expert opinion and the basis for that opinion may be "good fodder

1   for cross-examination"). Moreover, the prior interviews referenced by Defendants do not purport

2   to offer expert opinion based upon a synthesis of all the literature (including publications that have

3   come out since the time of the interviews), or a review of internal Defendants' research and data

4   (in which Meta's own researchers acknowledge that "███████████████████████████.").

5   *See* Ex. 67, META3047MDL-020-00082810 at 42. Rather, these interviews discuss specific studies

6   in isolation or more generally her lab's work.

7   Dr. Telzer's acknowledgment of individual study limitations is entirely consistent with

8   sound scientific practice. Limitations of individual studies are not grounds for exclusion when they

9   form part of the body of evidence an expert considers. *See U.S. v. W.R. Grace*, 504 F.3d 745, 765

10   (9th Cir. 2007) (study limitations go to weight not admissibility). Nor is there a requirement that

11   every study Dr. Telzer considered prove causation by itself; Dr. Telzer can rely upon the totality of

12   the evidence, including correlational data, as explained above, *supra* §A.2. *See also Soc. Media*

13   *Cases*, 2025 WL 2807828, at *48 ("Defendants have failed to show that, when Telzer reviewed a

14   wide range of sources as part of her scientific literature review, it was scientifically unreliable for

15   her to include correlational evidence as a basis for her causation opinions."); *see also In re Roundup*

16   *Prods. Liab. Litig.*, 358 F. Supp. 3d 956, 962 (N.D. Cal. 2019), *aff'd but criticized sub nom.*

17   *Hardeman v. Monsanto Co.*, 997 F.3d 941, 961 n.5 (9th Cir. 2021) (plaintiffs "might be able to

18   prove their case using multiple pieces of evidence, none of which could, on its own, satisfy the

19   burden of proof.").

20   Defendants also quote pieces of Dr. Telzer's deposition testimony out-of-context to imply

21   she is mixing up correlation and causation. Mot. at 54. But this is readily disproven by Dr. Telzer's

22   own words: Dr. Telzer agreed that "[y]ou can have two things that are correlated that are not

23   causal," Ex. 68, Telzer MDL Dep. 172:18-19, and explained that "we use the word 'correlation'

24   very narrowly to mean we ran a correlation analysis. So we would not use those words

25   interchangeably because the statistic is a correlation." *Id.* 175:23-73:3. At the same time, she

26   explained that "[w]e often use the word 'association' as a form of causation in our research in a

27   singular empirical article. Depending on the method used, we may use those two words [association

28   and causation] interchangeably." *Id.* 175:6-10.

1   Defendants next make the meritless claim that Dr. Telzer "offers opinions without literature

2   support," Mot. at 54, citing "her attitude" toward the DSM-5. *Id*. Snide attacks aside, Defendants'

3   argument that Dr. Telzer has "cherry-picked" literature is not true—Dr. Telzer has provided

4   extensive citations to publications that discuss social media harms—and appears to be Defendants'

5   way of saying they disagree with her conclusions. *Soc. Media Cases*, 2025 WL 2807828, at *48

6   ("Defendants do not identify the studies that Telzer is purportedly ignoring. In reality, Defendants

7   take issue with Telzer's *conclusions.* Defendants can address these issues during cross-

8   examination."). Defendants' assertion that Dr. Telzer cites "only company documents when

9   discussing how features of social media affect adolescents" is also misleading. Mot. at 54. Dr.

10   Telzer relies upon numerous peer-reviewed publications that specifically examine the impact of

11   social media features on adolescents. *See, e.g.*, Ex. 63, Telzer Reb. Rep. ¶¶41-67. Similarly,

12   Defendants' criticism of Dr. Telzer for considering studies on "phone" use and not just "social

13   media," Mot. at 54-55, is mislaid. Dr. Telzer considered both types because both help inform her

14   causation opinions given the robust data showing that social media is a large percentage of

15   adolescent smart phone time. Ex. 62, Telzer Rep. ¶328; *see supra* §A.4. This is at best grounds for

16   cross-examination.

17   c.   **Dr. Telzer's opinions regarding addiction are based on the**
                    literature, her education, and her professional experience, and
18   **are thus admissible.**

19   Again, "[t]he fact that the DSM-5 does not include the term 'social media addiction' does

20   not, without more, justify excluding the opinion of an expert that such a condition exists." *Soc.*

21   *Media Cases*, 2025 WL 2807828, at *48; *see supra* §A.1. Defendants cite no authority requiring a

22   contrary conclusion. Defendants further take issue with Dr. Telzer's use of a 7-item questionnaire

23   in a single study that she has published, mischaracterizing it as the sole basis for her opinions on

24   addiction. Mot. 17-18. Not so. The 7-item questionnaire was used as part of two studies that have

25   since been subject to peer-review and published. Ex. 69, Burnell, et al. (2024), Flannery et al.

26   (2024). At no point does Dr. Telzer claim that this 7-item questionnaire is used clinically, nor that

27   it's the sole basis for her opinions regarding addiction, which are based upon a robust review of the

28   literature.

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d.   Dr. Telzer's opinions on smartphone use in schools are well-supported.

Contrary to Defendants' claims, Mot. at 55-56, Dr. Telzer's opinions about smartphone and social media use in schools are based upon multiple sources. *See generally* Telzer MDL Rep. ¶¶328-57. She draws on publicly available survey data, published peer-reviewed publications, and her professional work with students, parents, and advisory boards. Her opinions are also informed by her role at UNC and her collaboration with the Chapel Hill school system. Ex. 63, Telzer Reb. Rep. ¶151, Appendix 2; Ex. 62, Telzer Rep. ¶¶1, 58. Defendants ignore this foundation, instead misleadingly claiming that "all" these opinions are based upon five descriptive figures that are not yet published. Mot. at 55-56. In fact, Dr. Telzer explained that all the "critical details regarding the methodology are in the peer reviewed publication;" these figures simply provide a few descriptive findings that have not yet been published. Ex. 63, Telzer Reb. Rep. ¶151. In any event, Defendants have been provided with this underlying data for these figures, as well as an explanation of how the files fit the data in Appendix 2 of Dr. Telzer's Rebuttal Report. *See* Ex. 63, Telzer Reb. Rep. Appendix 2.

Defendants had ample opportunity to question Dr. Telzer about her school opinions and the basis for them—including the figures noted—at her deposition. If Defendants had truly thought there was something missing that was necessary and discoverable, they could have moved to compel a specific request. They have not done so. Instead, they now make misleading arguments regarding so-called "missing" data in an attempt to exclude expert opinions. Their efforts should be denied.

e.   Dr. Telzer has sufficient support for her opinion regarding YouTube use.

Defendants next seek to exclude Dr. Telzer's opinion that adolescents use YouTube for recreational purposes in school as opposed to only educational purposes. Mot. at 56-57. Their primary basis for this argument is deposition testimony in which Dr. Telzer was repeatedly asked if she could name a study off the top of her head, and repeatedly responded she would need to review her materials considered list and primary report to do so. Ex. 68, Telzer MDL Dep. 193:3-97:19. Defendants refused to give her the time to do this. *Id*. The Court should reject this "gotcha"

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1   argument. A deposition is not a memorization test—Dr. Telzer testified clearly that she is familiar

2   with relevant literature but just couldn't recall all of it off the top of her head. *See, e.g.*, *id.* 55:19-

3   59:15; *see, e.g.*, *Kamradt v. Esurance Ins. Co.*, 2024 WL 5356886, at *5 (W.D. Wash. Nov. 1,

4   2024) (finding there is "a difference between not remembering some basis for an opinion during a

5   deposition and not having a basis at all for the opinion"). Exemplars of those studies supporting her

6   opinions are attached. Ex. 70, Charmaraman (2025); Ex. 71, Bardakci (2019); Ex. 72, Lozano-

7   Blasco (2023); Ex. 73, Shoufan & Mohamed (2022); Ex. 74, Adelhardt (2022). Dr. Telzer's opinion

8   is also supported by her professional experience with student advisory boards at UNC-Chapel Hill

9   and high schools. Ex. 68, Telzer MDL Dep. 21:8-14.

10   **f.   Dr. Telzer has considered each platform and offers opinions
                         regarding each.**

11
12   Defendants claim that Dr. Telzer has not offered opinions specific to the "features of

13   Facebook, Instagram, TikTok, Snapchat, and YouTube." Mot. at 57. For the reasons explained

14   *supra* §A.4, these arguments fail. *See also Soc. Media Cases*, 2025 WL 2807828, at *49 (rejecting

15   this argument as to Dr. Telzer). This argument also ignores Dr. Telzer's reports, which directly

16   address specific features of Defendants' platforms and the ways that they can harm adolescents'

17   brain development. *See, e.g.*, Ex. 62, Telzer Rep. ¶¶121-38; Ex. 63, Telzer Reb. Rep. ¶¶41-67. Dr.

18   Telzer testified that the platforms' features—which include "publicness; visualness; the

19   availability, 24/7 access to these platforms; the quantifiability, so likes, comments; the algorithmic

20   nature of it, in particular; the synchronicity"—are what make social media "especially harmful for

21   adolescents." Ex. 2, Telzer JCCP Dep. 200:10-16, 201:14-15. In sum, Dr. Telzer has extensively

22   analyzed how the features of social media cause harm.

23   **g.   Dr. Telzer use of industry documents is reliable and admissible.**

24   Finally, Defendants assertion that Dr. Telzer's reliance on internal company documents

25   renders her opinions inadmissible has no basis and should be rejected. Mot. at 57-58. As explained

26   above, *supra* §A.5, "Telzer 'may testify about [her] review of [Defendants'] corporate documents

27   … for the purpose of explaining the basis for [her] opinions, assuming those opinions are otherwise

28   admissible.'" *Soc. Media Cases*, 2025 WL 2807828, at *48 (quoting *Zetz,* 644 F.Supp.3d at 703).

1   Defendants cast Dr. Telzer's use of examples of their documents throughout her report as cherry-

2   picking, but she testified clearly that she reviewed hundreds of internal company documents and

3   depositions. Ex. 2, Telzer JCCP Dep. 92:14-94:24. This is consistent with Dr. Telzer's academic

4   practice, where she routinely reviews industry-funded research. Far from grounds for exclusion, it

5   strengthens her opinions. *In Re: Bard*, 2017 WL 6554163, at *2.

8.   Dr. Twenge's testimony is admissible.

7   Dr. Twenge is a recognized expert on generational trends in adolescent mental health, and

8   the impact of technology and social media on youth. She has published her research on the causal

9   relationship between teens' increasing use of social media use and smartphones, and adolescent

10   depression in over 30 peer-reviewed papers (Ex. 75, Twenge Rep. ¶12), and has consulted with

11   federal and state regulators regarding this research (Ex. 17, Twenge JCCP Dep. 20:12-22:14). Dr.

12   Twenge is thus testifying "about matters growing naturally and directly out of research" she

13   "conducted independent of the litigation," a "significant factor" weighing in favor of her reliability.

14   *Palantir Techs. Inc. v. Abramowitz*, 2022 WL 22913842, at *1 (N.D. Cal. Nov. 3, 2022) (Freeman,

15   J.) (citing *Daubert v. Merrell Dow Pharms., Inc.*, 43 F.3d 1311, 1317 (9th Cir. 1995)).

16   Dr. Twenge's expert opinion is there is "a clear causal path from social media use to low

17   psychological well-being in adolescents." Ex. 75, Twenge Rep. ¶7. Dr. Twenge employed two

18   distinct methodologies in her report, both of which provide a sufficient basis under *Daubert*. First,

19   Dr. Twenge conducted a review of relevant literature (*id.* ¶¶24-93), including both studies that did

20   and did not find that social media negatively impacts adolescent mental health (*see, e.g.*, Ex. 75,

21   Twenge Rep. ¶¶74-79, 85, 91-93, discussing contrary correlational, longitudinal, and experimental

22   studies). A review of relevant peer-reviewed literature, in conjunction with the expert's own

23   relevant experience, is a proper and reliable methodology. *See, e.g.*, *Hardeman*, 997 F.3d at 967.

24   Second, Dr. Twenge applied the Bradford-Hill criteria to the evidence she examined. Ex. 75,

25   Twenge Rep. ¶¶94-107. "The Bradford-Hill criteria are nine factors generally accepted as relevant

26   to assessing causation." *Hardeman*, 997 F.3d at 953 n.2. Her expert opinion that social media use

27   is a significant causal factor for mental health issues in adolescents is based principally on her

28   literature review. The Bradford-Hill analysis supports her ultimate conclusion. And although the

1   Bradford-Hill analysis is reliable, even if it were not, Dr. Twenge's opinions would nonetheless be

2   admissible because that analysis is not "necessary to sustain [her] opinions." *See In re Juul*, 2022

3   WL 1814440, at *33 (denying motion to exclude, noting that expert's "consideration of factors

4   associated with the Bradford-Hill analysis does not appear necessary to sustain his opinions").

              a.   **Dr. Twenge's opinions do not rest on third-party content or protected publishing features.**

7   As discussed above, *supra* §I, and in Plaintiffs' Section 230 Brief, Defendants' Section 230

8   argument is not grounds for exclusion. Defendants' claim that Dr. Twenge "does not provide *any*

9   opinion as to whether the at-issue features of Defendants' platforms are capable of causing

10   Plaintiffs' alleged harms, independent of third-party content or publishing features" is also factually

11   incorrect. Mot. at 60. Dr. Twenge's causation opinions relate to the relationship between time spent

12   on social media platforms and mental health outcomes; they are not focused on the content users

13   view. Ex. 17, Twenge JCCP Dep. 409:8-11. Time spent is "agnostic to content" (*id.* 410:4-5) and

14   is "heavily influenced by features, if it encourages spending as much time on the app as possible."

15   *Id.* 224:20-25:2; *see also id.* 98:23-100:9 ("[S]o no matter what the content is, if the algorithm and

16   the design lead to more time spent, especially excessive time spent, then, yes, it could have an

17   impact."); 198:16-20 (discussing study that measured time spent on social media, which "is pretty

18   agnostic in terms of content"); 377:16-78:17 (noting a study's failure to separate out types of

19   content was not a "significant limitation"). She acknowledges that time spent is "going to be maybe

20   partially driven by content, but it's also *primarily going to be driven by the features designed to*

21   *increase time spent.*" *Id.* 456:18-57:16 (emphasis added)). And even if content also plays a role, an

22   expert need not "eliminate all other possible causes of a condition for the expert's testimony to be

23   reliable. It is enough that the proposed cause be a substantial causative factor." *Wendell*, 858 F.3d

24   at 1237 (cleaned up). "Twenge's analysis focuses on the time spent on social media, regardless of

25   the content viewed, and concludes that social media use in general causes mental health harm:

26   'Experimental studies show that reducing social media and screen use improves well-being. The

27   evidence as a whole thus demonstrates a causal path from social media use to depression and low

28   well-being, and fulfills all of the Bradford-Hill criteria for establishing causation.'" *Soc. Media*

1   *Cases*, 2025 WL 2807828, at *51.[15] (quoting Twenge Rep.) Defendants' objections to Dr.

2   Twenge's conclusions are not a basis for exclusion.

3   **b.   Dr. Twenge's causal analyses are methodologically sound.**

4   Defendants claim that Dr. Twenge did not apply the same "methodological rigor" in this

5   litigation as compared to her "scientific practice." Mot. at 61. Review of Dr. Twenge's academic

6   publications *prior* to this litigation easily refutes this argument. *See* Ex. 76, Twenge MDL Dep.

7   587:11-18 (confirming she employed the same methods to the facts of this case in the same manner

8   she would have in her academic work). Specifically, the methodology she employed in a 2020

9   paper mirrors that utilized in her expert report. *See* Ex. 77, Twenge, J., *Why increases in adolescent*

10   *depression may be linked to the technological environment*, 32 Current Opinion in Psych. 89

11   (2020). In Twenge (2020), Dr. Twenge reviewed four types of studies: time-series (at 90-91),

12   correlational (at 89-93), longitudinal (at 93), and experimental (at 93). *Id*. In her expert report, Dr.

13   Twenge does the same. Ex. 75, Twenge Rep. ¶14. Based on review of the literature, Twenge (2020)

14   concluded "the technological environment is a plausible cause of the decline in [adolescent] well-

15   being." Ex. 77, Twenge (2020), at 93. Considering the additional literature that has emerged in the

16   past five years, Dr. Twenge's review of the body of evidence in 2025 yields the following similar

17   but more conclusive assessment: "[t]he totality of the evidence … demonstrates that social media

18   use is a causal factor in the youth mental health crisis." Ex. 75, Twenge Rep. ¶108, *see also* Ex. 76,

19   Twenge MDL Dep. 585:23-86:11 (same).

20   That Dr. Twenge acknowledged that "causation cannot be proven" solely from time series

21   studies in one of her academic publications is not a basis for exclusion. Mot. at 62. Dr. Twenge

22   rejected Defendants' attempt to mischaracterize her publication at deposition, explaining the

23   statement "causation cannot be proven" in this book chapter is in the context of "time series

24   studies." Ex. 76, Twenge MDL Dep. 306:35-07:21. This is consistent with her description of time

25   series studies in her report. She recognized, "[t]ime series studies can point toward causation if one

26   factor occurs before another. They cannot show causation as definitively as a random-assignment

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28   ---

[15] Dr. Twenge's JCCP report is "virtually identical" to her MDL report. Ex. 17, Twenge JCCP Dep. 100:13-24.

1   experiment (also known as a randomized-controlled trial), but they usually use considerably larger

2   samples, making them less vulnerable to random variation (i.e. chance)." Ex. 75, Twenge Rep.

3   ¶15.[16]

4   While Dr. Twenge's causal opinion does not "rest on correlational or cross-sectional

5   studies," Mot. at 61-62—as noted, she also analyzes other types of studies including longitudinal

6   and experimental—correlational studies are one piece of evidence that "can still be used in the body

7   of evidence to prove causation." Ex. 17, Twenge JCCP Dep. 103:7-10; *Soc. Media Cases*, 2025

8   WL 2807828, at *53 (rejecting Defendants' "unsupported conclusion that, if an individual study's

9   authors state that that study, when viewed alone, cannot demonstrate a causal connection, then

10 reliance on multiple, similar studies cannot support a causation opinion"). Defendants'

11 disagreement as to "[t]he strength" of Dr. Twenge's "source studies" "goes to the weight…not

12 admissibility" of her opinions. *Ringcentral*, 2021 WL 12171869, at *4; *see also Buchanan v. Tata*

13 *Consultancy Servs., Ltd.,* 2017 WL 6611653, at *8 (N.D. Cal. Dec. 27, 2017) (Gonzalez Rogers,

14 J.) ("A statistical study may fall short of proving the plaintiff's case, but still remain relevant to the

15 issues in dispute." (internal citation omitted)).

        c.   **Dr. Twenge's Bradford-Hill analysis is aligned with the methodology relied on by experts in the field.**

16
17 The Court should reject Defendants' claim that Dr. Twenge's Bradford-Hill analysis is

18 somehow not her own work. This argument is based entirely on Defendants' unsupported claim

19 that Dr. Twenge's expert report is "cribbed" off an online article published by another of Plaintiffs'

20 experts, Dr. Anna Lembke, applying the Bradford-Hill methodology to social media. Mot. at 60.

21 Dr. Twenge is an eminently qualified academic researcher who has spent a decade studying the

22 interplay between social media and adolescent mental health. It is true that she lacks longstanding

23 familiarity with the Bradford-Hill framework, but that does not render her unqualified to apply it.

24
25 [16] In any event, as explained above, *supra* §IV.A.2, it is not "*per se* unreliable for an expert to
    draw an inference of causation from an epidemiological study that disclaimed proving causation."
26 *In re Bair Hugger*, 9 F.4th at 779; *see also In re Abbott*, 2025 WL 1283927, at *14 (finding that
    inclusion of "hedging language" in an academic paper does not "demonstrate" that an expert
27 "used any less rigor in reviewing studies"); *Wendell*, 858 F.3d at 1236 ("[T]he fact that science
    would require more evidence before conclusively considering the causation question resolved is
28 irrelevant to the admissibility of expert testimony.").

1   In *In re Roundup*, 390 F. Supp. 3d at 1131, Judge Chhabria found that if an expert is qualified to

2   opine on a particular scientific field, she is qualified "to engage in a Bradford Hill analysis." So too

3   here. *See also* Ex. 17, Twenge JCCP Dep. 321:7-10 (stating she is an "expert in many of the

4   individual [Bradford -Hill] criteria").[17] Moreover, Dr. Twenge's Bradford-Hill analysis is based on

5   a different set of evidence than Dr. Lembke's earlier online post. For instance, while time-series

6   data was a central consideration for four criteria in Dr. Twenge's Bradford-Hill analysis, time-

7   series data was not a focus of Dr. Lembke's article. *Compare* Ex. 75, Twenge Rep. ¶¶99–101, 105

8   (consistency, specificity, temporality, and coherence), *with* Mot. Ex. 75. "[T]he fact that there might

9   be similarities between the work of two different experts studying the effects of social media use

10   on mental health (or that they would rely on similar studies) is hardly surprising." *Soc. Media Cases*,

11   2025 WL 2807828, at *51 (rejecting Defendants' identical argument in the JCCP).

12   More to the point, Dr. Twenge conducted an admissible Bradford-Hill analysis. She

13   examines each Bradford-Hill criterion separately, explaining why the evidence satisfies each factor.

14   *See In re Testosterone*, 2017 WL 1833173, at *11 (finding plaintiffs' experts had a sufficient basis

15   for forming an opinion concerning causation by considering a number, but not all, of the Bradford-

16   Hill factors). Unlike in the case Defendants cite, where the expert seemingly weighed all the

17   Bradford-Hill criteria equally, without explanation,[18] Dr. Twenge's analysis centrally relies on the

18   "specificity" (Ex. 75, Twenge Rep. ¶100), "strength of the association" (¶¶95-98), "consistency"

19   (¶99), "temporality" (¶101), and "experiment" (¶106) criteria. "Defendants fail to show that any

20   methodologies employed by Twenge as to a single factor are unreliable; and Twenge has found that

21   each factor supports her causation opinion." *Soc. Media Cases*, 2025 WL 2807828, at *52.

22

23

24   ---

[17] *Compare* Ex. 77, Twenge (2020) at 89 ("time sequence: does the possible cause occur during the
25   same years, or just before?"), *with* Ex. 75, Twenge Rep. ¶101 ("Temporality means that the
      exposure (social media) must occur before the disease (poor mental health)"); *compare* Ex. 77,
26   Twenge (2020) at 90 ("does the possible cause affect a large number of people in the impacted
      group?" and "), *with* Ex. 75, Twenge Rep. ¶95 ("[t]he strength of the association between two
27   variables can be measured with a statistic known as relative risk (RR), which shows how much
      more likely someone is to have a negative outcome if they are in one group versus another").
28   [18] *Cf. In re Paraquat Prods. Liab. Litig.* 730 F.Supp.3d 793, 841 (S.D. Ill. 2024) (expert did not
      indicate "which [factors] he considers most probative of a causal relationship").

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d.   Dr. Twenge's analysis properly examines the causal relationship between the alleged exposure and outcomes in this case.

Defendants' argument that Dr. Twenge's causation analysis "fails to define in any meaningful way the exposures and outcomes she analyzes" lacks merit. Mot. at 62. As explained above, *supra* §A.3, Dr. Twenge's reliance on the literature that measures self-reported exposure and symptoms is valid and not a basis for exclusion.

Psychological well-being is an appropriate means to define the alleged outcome. Dr. Twenge opines that "generally speaking, depression, anxiety, unhappiness, low life satisfaction, correlate pretty highly with each other. So low psychological wellbeing is going to include all of those. And most of the time, those outcomes or associations are going to be fairly similar, if not really similar." Ex. 17, Twenge JCCP Dep. 120:1-9. Unlike in *Acetaminophen,* Dr. Twenge "explained her opinion that mental health harms are 'highly correlated with each other' and thus could be studied under the umbrella term 'psychological well-being.'" *Soc. Media Cases*, 2025 WL 2807828, at *52 (quoting Twenge JCCP Dep. 324:22-25:1); *Acetaminophen*, 707 F. Supp. 3d at 342. Judge Kuhl thus properly found "Defendants have failed to present any evidence suggesting that it is scientifically unreliable to study *general* causation as to a set of similar psychiatric disorders." *Id.* Moreover, in *Acetaminophen* the expert's methodology had not "been subjected to peer review and publication " (a factor that "might prove helpful in determining [] reliability"), whereas here Dr. Twenge's has. *Acetaminophen*, 707 F. Supp. 3d at 335; *see* Ex. 77, Twenge (2020) at 93 (drawing a causal conclusion regarding "adolescent well-being" from data on "happiness," "life satisfaction," "depression," and "suicide attempts"). Regardless, it is simply untrue that Dr. Twenge's analysis "lumps together myriad, diverse measures of mental health." Mot. at 62. In assessing low psychological well-being, Dr. Twenge's report evaluates the relationship between social media use and specific, highly-correlated injuries in turn. Ex. 75, Twenge Rep. Figures 1, 4, 10, 14 (depression), Figure 2, 5, 11 (self-harm), Figure 3 (suicide), Figure 14, 16 (anxiety), Figure 6 (sleep, as relevant to social media addiction and other mental health conditions).

As explained above, *supra* §A.4, Judge Kuhl also rejected Defendants' argument that Dr. Twenge must conduct platform-specific causal analyses. *Soc. Media Cases*, 2025 WL 2807828, at

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1   *52 ("If Defendants believe that Twenge's conclusions are insufficient evidence to demonstrate

2   that a particular platform caused a particular type of harm, then they will be free to so demonstrate

3   at trial."). Their argument also rests upon mischaracterizations of Dr. Twenge's testimony on a

4   particular study. *Compare* Mot. at 65 ("admitting the only study she reviewed that addressed use

5   across specific platforms concluded 'the impact of social media is … platform specific,' which she

6   agreed is the "proper interpretation" of that study (quoting Ex. 17, Twenge JCCP Dep 449:19-

7   50:15)); *with* Ex. 17, Twenge JCCP Dep. 450:10-12 (testifying she would "need to see this

8   replicated maybe a few more times and see more studies to be more confident" in the study's finding

9   that "the impact of social media is…platform specific"); *compare* Mot. at 65 n.34 ("she

10 acknowledged that the only study she cited in her report specifically discussing Snapchat found

11 that '[s]pending time on Snapchat positively affected friendship closeness and well-being'"

12 (quoting Ex. 17, Twenge JCCP Dep. 447:9-48:25)); *with* Ex. 17, Twenge JCCP Dep. 453:3:10 ("I

13 would not write that sentence. And it's also based on my evaluation of benefit versus risk. That

14 maybe this one study, for example, shows these effects on friendship closeness, but then with

15 Snapchat, there's other risks involved such as getting drugs or getting addicted to Snapstreaks.").

16 Relatedly, Defendants' quibble that Dr. Twenge's opinions should not apply to Snap are

17 baseless. *Compare* Mot. at 65 n.34 (asserting Dr. Twenge examined one Snap-specific study); *with,*

18 *e.g.*, Ex. 20, Twenge Reb. Rep. Ex. D, at entries 123, 262, and 263. Although Dr. Twenge did in

19 fact review some Snap internal documents (*id.* at entries 508-12), she was not required to do so and

20 her knowledge on the user interface of Snap mirrors if not exceeds that of Defendants' experts. *See*

21 Ex. 27, Gotlib JCCP Dep. 176:22-77:2 ("Q. What is a Snap Streak? A. I have no idea.").

22   e.   **Dr. Twenge did not need to quantify the percentage of purported**
                    harms caused by social media use.
23

24 Defendants argue that in order for Dr. Twenge to opine that social media is a "key

25 contributor to increases in adolescent depression, unhappiness, loneliness, self-harm, and suicide,"

26 she needs to assign a percentage to the influence of social media versus other contributing factors.

27 Mot. at 65. Defendants offer no legal support for this claim and there is none. In *Wisk Aero LLC v.*

28 *Archer Aviation Inc.*, the court confronted a similar argument, and found that the moving party

1   "cites no law, and I could find none" showing an expert needed to "prove how much in damages

2   were caused by" the act of defamation versus other factors such as "the litigation or the market."

3   2023 WL 3919469, at *5 (N.D. Cal. June 9, 2023) (Orrick, J.) (finding it was "a disputed issue of

4   material fact that can be resolved by the jury"). The court held an expert need not "separate out"

5   …"the effects of the other contemporaneous events" or "quantify" the degree of harm to find the

6   cause was a "substantial factor." *Id.*; *see also In re Toy Asbestos,* 2021 WL 1167638, at *3 (N.D.

7   Cal. Mar. 26, 2021) (Gilliam, J.) (finding an expert was not required to quantify Plaintiffs' asbestos

8   exposure under Rule 702 or *Daubert*).

9   Defendants' sole cite, *Engilis*, offers no support for exclusion. Mot. at 66. In *Engilis,* the

10   court classified the expert's opinions as "speculative" because they failed to "provide reasons for

11   rejecting alternative hypotheses 'using scientific methods and procedures.'" 151 F.4th at 1053

12   (quoting *Clausen v. M/V NEW CARISSA*, 339 F.3d 1049, 1058 (9th Cir. 2003)). Defendants make

13   no such claim here, nor could they. Dr. Twenge thoroughly examined alternative causes for the

14   adolescent mental health crisis and explained why none account for the decline in adolescent mental

15   health nearly as persuasively as the increase in teen use of social media. Ex. 75, Twenge Rep. ¶¶33-

16   60; Ex. 20, Twenge Reb. Rep. ¶¶26-37. Defendants' argument should be rejected as it is untethered

17   to either fact or law.

18   **9.   Dr. Hoover's testimony is admissible.**

19   Dr. Sharon Hoover is a licensed clinical psychologist currently serving as Professor

20   Emeritus of Child and Adolescent Psychiatry at the University of Maryland School of Medicine

21   where she has been on the faculty for over 20 years. Ex. 78, Hoover Rep. ¶12. She is an experienced

22   clinician, researcher and consultant on adolescent mental health in schools and served as the co-

23   director of the National Center for School Mental Health for 15 years. *Id.* ¶¶13-15, 20. Significantly,

24   Dr. Hoover specializes in, and has extensive real-world experience in, consulting with schools on

25   student mental health and developing strategic plans for districts across the country. *Id.* ¶¶17-18.

26   Dr. Hoover has also served as an advisor to the U.S. Department of Education, U.S. Department of

27   Health and Human Services, and the World Health Organization; has testified before national and

28   state legislative bodies; and regularly interacts with education leaders regarding school mental

1   health policy and implementation throughout the United States. *Id*. ¶21.

2   Unable to attack Dr. Hoover's impeccable credentials, which demonstrate that she is

3   eminently qualified to offer the opinions in her report, Defendants lodge unsupported attacks on

4   Dr. Hoover's analysis and methodology. For instance, Defendants argue Dr. Hoover did not

5   identify previous publications or presentations she has given regarding the impact of students' use

6   of social media at her deposition. This misconstrues her testimony that she would need to review

7   her numerous publications and over 600 presentations to provide an accurate answer (Ex. 79,

8   Hoover Dep. 798:8-800:24) and ignores additional testimony where she explains that addressing

9   the impact of social media in schools is a regular part of her work. *Id.* 112:21-13:10 (testifying that

10   "[t]he topic of social media and student use" frequently comes up in her supervisory clinical work

11   "because it's now so related to student mental health challenges."); *id*. 206:11-17 ("as you would

12   imagine, as director of the National Center for School Mental Health, who's worked with about

13   every state and hundreds of school districts, there are lots of events that—you know, where social

14   media comes up."); *id*. 371:9-17 ("I've worked with lots of schools and students . . . And social

15   media comes up as harmful in about every school if not every school that I engage with.").[19]

16   Here, Dr. Hoover used a sound methodology based on her standard practice and the

17   principles of her fields of public health and implementation science, to conclude that Defendants

18   have caused harms to school districts. There is no basis to exclude. *Alaska Rent-A-Car, Inc. v. Avis*

19   *Budget Grp., Inc.*, 738 F.3d 960, 969 (9th Cir. 2013) (expert testimony is "reliable if the knowledge

20   underlying it has a reliable basis in the knowledge and experience of the relevant discipline").

21   a.   **Dr. Hoover offers opinions about Defendants' at-issue conduct.**

22   Defendants mischaracterize Dr. Hoover's report as not concerning Defendants' platforms.

23   This is plainly untrue as both her report and deposition testimony show. *See, e.g.*, Ex. 78, Hoover

24   Rep. ¶30; Ex. 79, Hoover Dep. 203:7-24 ("When I speak about social media, [in my reports] it's

25   talking about . . . defendants' platforms."); Ex. 80, Hoover. Reb. Rep. ¶108 ("I am clear in citing

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27   [19] It is wholly unnecessary for an expert to have previously published on a topic in order to provide
     expert testimony on that topic. *See Wendell*, 858 F.3d at 1235 ("[T]he district court was wrong to
28   put so much weight on the fact that the experts' opinions were not developed independently of
     litigation and had not been published.").

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1   harms that stem not from general screen time, but from design features and engagement patterns

2   characteristic of the platforms developed by Defendants."). Moreover, Dr. Hoover considered the

3   opinions of other experts who opined that Defendants' platforms that have caused the relevant

4   harms to students, which informs her opinions about the harms to schools. *See, e.g.*, Ex. 78, Hoover

5   Rep. ¶4; Ex. 62, Telzer Rep. ¶¶284-90, 329-30.

6   Defendants also attempt to discredit Dr. Hoover's opinions by criticizing her citations to

7   studies that they claim only discuss social media generally, and to articles regarding student cell-

8   phone use. In doing so, Defendants cite to three studies, but these are merely three out of 80 articles

9   and six expert reports Dr. Hoover considered, *see* Ex. 78, Hoover Report Ex. B, including numerous

10   studies that specifically call out Defendants' platforms and their impacts on adolescents.[20]

11   Moreover, as explained above, *supra* §A.4, Defendants' platforms—which are the most popular

12   platforms amongst adolescents—are not so "inherently different" that "they are not reasonably

13   comparable" to each other. *Social Media Cases*, 2025 WL 2807828, at *12, 35, 40, 52.

14   Further, as Defendants admit, Dr. Hoover's reports contain numerous references to both

15   Defendants' platform design as a whole and to specific features as the cause of the harms to the

16   school districts. Mot. at 68. Dr. Hoover describes the "pervasive negative impact" Defendants'

17   platforms have on schools, including through addictive features that disrupt classroom dynamics,

18   harm the school environment, and impair teaching effectiveness. *See* Ex. 78, Hoover Rep. ¶¶34,

19   53-57. She explains how the compulsive use of Defendants' platforms by students causes sleep

20   deprivation, anxiety, depression, self-harm, and negative body image in students, *id.* ¶¶63-76,

21   which impacts academic focus, learning, and performance, *id.* ¶¶35-46, diminishes student social

22   skills, and erodes the school environment, *id.* ¶¶ 47-52. This increases burdens on schools by

23   forcing the reallocation of limited resources, *id.* ¶¶77-82, in addition to hurting teacher morale, *id.*

24   ¶58. Dr. Hoover also relied on the reports of other Plaintiff experts regarding the negative impact

25   of specific features of Defendants platforms. Ex. 79, Hoover Dep. 153:12-154:1 ("I … relied on

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[20] *See, e.g.,* Ex. 78, Hoover Rep. Ex. B citing Siebers, T., et al. (2021) (Instagram and Snapchat)
27   (Ex. 81); Christakis, D. A., et al. (2025) (examining student use of Instagram, TikTok, and
Facebook during school hours) (Ex. 82); Dontre, A. (2020) (Facebook) (Ex. 83); Hunt, M. G., et al.
28   (2018) (Facebook, Instagram, and Snapchat) (Ex. 84); Zahra, M. F., et al. (2022) (TikTok) (Ex.
85); Nesi, J. (2020) (Instagram, Snapchat, Facebook, and TikTok) (Ex. 86).

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other expert reports who really did do a deeper dive into some of the design features of the different platforms."). Notably, Judge Kuhl has already found that the causation experts on whom Dr. Hoover relied employed reliable methodologies to conclude "that social media *features* cause harm as a general matter." *See Social Media Cases,* 2025 WL 2807828, at *10, 15, 23, 27, 33, 37, 46, 51. Defendants also ignore Dr. Hoover's testimony that the design features and not the content are the primary cause of harm to school districts. *Id*. at 182:20-183:3 ("[W]hat I can tell you is that . . . regardless of the content, it is that compulsive checking of the phones, the social media platforms."); *id.* at 280:11-20 ("I think there's this kind of false notion that . . . there's positive content and negative content and the negative content harms our young people . . .when in fact it's often just the process of engagement of our young people, right. They are engaging compulsively.").

As Judge Kuhl recognized, and explained above and in Plaintiffs' Section 230 Brief, that third-party content or protected features are "a but-for cause of Plaintiffs' harm (or even the sole cause of some of a Plaintiff's harm) does not mean that Plaintiffs are unable to show that design features also caused harm." *Social Media Cases*, 2025 WL 2807828, at *27.

b.   Dr. Hoover used a reliable methodology in reaching her general causation opinions.

Defendants' assertion that Dr. Hoover lacks a reliable methodology is without basis. Dr. Hoover's expertise in implementation of school mental health interventions is second to none, and her methodology used is consistent with the standard practice in her field. Here, Dr. Hoover applied the same methodology she uses every day consulting with schools nationwide, drawing on her experience in public health and implementation science, research on comprehensive school mental health systems, review of discovery documents and scientific literature, direct interactions with state and local education leaders, and interviews with bellwether school district employees. Ex. 78, Hoover Rep. ¶¶25-29.

With regard to her scientific literature review, Dr. Hoover explained the sources of the studies and the keywords used to identify relevant works. *Id*. ¶27. This scientific literature review also considered the reports of Plaintiffs' other general causation experts and the studies cited

1   therein. *Id.* ¶¶4, 30-82. The findings in her report are supported by specific citations to the relevant

2   studies, and she explains how her review of the studies leads to her conclusions regarding specific

3   ways in which Defendants' platforms have negatively impacted schools, *id.* ¶¶ 30-82, as well as

4   her conclusion that Defendants' platforms have caused school district harms, *id.* ¶83 (concluding

5   after substantial discussion of materials considered and the conclusions gleaned from them that

6   "[t]he cumulative evidence presented across these domains reveals the profound and far-reaching

7   impact of student social media use on school districts, schools, the school environment, student

8   mental health and learning."). Defendants' arguments that certain studies considered by Dr. Hoover

9   only find an "association" between Defendants' platforms and negative outcomes and that these

10   articles allegedly disclaim causality, is a retread of meritless arguments Defendants lodge against

11   several Plaintiff experts. These arguments fail for the reasons discussed above, *supra* §A.2.

12   This methodology is consistent with Dr. Hoover's general practice when determining the

13   source of harms in school districts in order to create strategic plans for addressing such harms, and

14   is the methodology used in her fields of public health and implementation science. *See* Ex. 78,

15   Hoover Rep. ¶28 ("The conclusions and recommendations presented in this report are grounded in

16   both the scientific evidence base and my understanding based on 25 years of experience in the field

17   of the practical implementation experience necessary to guide feasible, effective, and sustainable

18   solutions within the school district context."). Dr. Hoover used commonly accepted principles in

19   her field to determine when an observed association is likely to reflect a causal relationship,

20   specifically examining: (1) how the rise in student social-media engagement preceded and

21   paralleled the increase in mental-health and learning disruptions observed in schools (Ex. 78,

22   Hoover Rep. ¶¶48, 54-57,61,69,70,72); (2) that these patterns have been replicated across multiple

23   studies, populations, and geographies, and corroborated by the lived experiences of school staff (*id.*

24   ¶¶40,48, 61, 70); (3) that greater duration and intensity of social-media exposure correspond with

25   worse mental-health and attentional outcomes (¶¶35, 42, 70); (4) how established psychological

26   and neurobiological mechanisms (such as social comparison, intermittent reinforcement, and sleep

27   disruption) provide a coherent scientific basis for these outcomes (¶¶34, 74-76); and (5) how the

28   literature and district-level data converge with observed school-system indicators such as

1   counseling demand and classroom disruption (¶¶25, 77-83, 85). Thus, Dr. Hoover's opinions have

2   a "reliable basis in the knowledge and experience of [her] relevant discipline" and are admissible.

3   *Alaska Rent-A-Car, Inc.*, 738 F.3d at 969; *see also Hardeman*, 997 F.3d at 962 ("a testifying expert

4   can rely on his own extensive clinical experience under *Daubert*."); *Elosu*, 26 F.4th at 1024 ("An

5   expert's specialized knowledge and experience can serve as the requisite 'facts or data' on which

6   they render an opinion.").

7   Defendants also suggest without support that Dr. Hoover's reliance on other Plaintiff

8   experts is improper. These reports which provide relevant information about the negative impacts

9   of Defendants' platforms on young people, and Dr. Hoover appropriately considered them to help

10   inform her opinions regarding the negative impact on schools. *See, e.g.*, *In re Da Vinci Surgical*

11   *Robot Antitrust Litig.*, 2024 WL 5697897, at *9 (N.D. Cal. Mar. 31, 2024) (Martínez-Olguín, J.)

12   ("[Expert's] reliance on the opinions of other experts in the case is permissible, particularly given

13   that all the other expert opinions he relies upon have been found sufficiently reliable." (internal

14   citation omitted)).

15   Next, Defendants raise a strawman argument by taking snippets of Dr. Hoover's deposition

16   out of context to suggest she relied on an incomplete Bradford-Hill analysis to form her causation

17   opinions. By mistakenly focusing on a Bradford-Hill medical causation analysis, Defendants fail

18   to offer any argument about what Dr. Hoover actually did and instead offer only a conclusory

19   argument that she did not employ a reliable methodology. Importantly, it was unnecessary for Dr.

20   Hoover to perform a Bradford-Hill analysis in order to form her causation opinions regarding *harms*

21   *to school districts*. Indeed, consideration of all of the Bradford-Hill criteria would not fit with Dr.

22   Hoover's opinions because she is *not* opining on harms to a specific person's health or whether a

23   product caused a medical issue. Defendants' own authority recognizes that consideration of all of

24   the Bradford-Hill criteria is appropriately used when attempting to determine whether certain

25   products have caused a medical condition.[21] Notably, the Bradford-Hill criteria includes "biological

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27   [21] *See, e.g.*, *Davis v. McKesson Corp.*, 2019 WL 3532179, at *32 (D. Ariz. Aug. 2, 2019)
     (considering whether MRIs cause health problems); *see also In re Viagra Prods. Liab. Litig.*, 572
     F. Supp. 2d 1071 (D. Minn. 2008) (considering whether drug caused a vision disorder); *In re*

28   *Nexium Esomeprazole*, 662 F. App'x 528, 530 (9th Cir. 2016) (concerning whether drug caused
     reduced bone mineral density).

1   plausibility" which looks for "[a] cause and effect relationship between exposure and disease."

2   *Davis*, 2019 WL 3532179, at *32. Here, other Plaintiff experts, some of whom Dr. Hoover relies

3   on, have appropriately employed a Bradford-Hill analysis because they offer opinions on

4   Defendants' platforms causing mental health harms to young people—thus considering whether

5   the platforms have negative health consequences on people. But, importantly, Defendants fail to

6   provide any support, for their argument that a *full* Bradford-Hill analysis was the only way for Dr.

7   Hoover to support *her* opinions on harm to *schools*.

8   While Dr. Hoover explains that she used many of the same criteria that a Bradford-Hill

9   analysis employs, such as considering multiple studies and temporal sequencing, *see* Ex. 79,

10   Hoover Dep. 244:4-15 ("I've certainly used some of the criteria in the Bradford Hill . . . mechanism

11   for determining . . . whether something is causal or not . . . temporal sequencing, multiple studies

12   that show correlation"), when an expert has an otherwise reliable methodology as Dr. Hoover does,

13   "[a]lthough the Bradford Hill criteria may be a tool for determining whether an epidemiological

14   study establishes causation. . .it is by no means required and in the context of a general causation

15   challenge, failure to satisfy the Bradford Hill criteria does not doom admission under *Daubert*." *In*

16   *re Celexa & Lexapro Prods. Liab. Litig.*, 927 F. Supp. 2d 758, 766 (E.D. Mo. 2013).

17   Finally, Defendants retread the same stale arguments that Plaintiffs' experts did not isolate

18   content from features or focus on each Defendant's platform individually. As Judge Kuhl

19   recognized, this "argument is best understood as a critique of the conclusions that are produced by

20   the. . .analysis, not the methodology employed" and that an expert's analysis may "fail[] to show

21   that any particular social media platform caused a particular type of harm suffered by a certain

22   Plaintiff is not a proper basis for excluding the testimony of a general causation expert." *Social*

23   *Media Cases*, 2025 WL 2807828, at *39.

24   In sum, Dr. Hoover formed her opinions using principles and methods accepted in her fields

25   of implementation science and public health. There is no basis to exclude her general causation

26   opinions.

27   **10.   <u>Dr. Hale's testimony is admissible.</u>**

28   Dr. Lauren Hale is a Professor and the former Director of the PhD Program in Population

RESPONSE TO MOTION TO EXCLUDE GENERAL
CAUSATION TESTIMONY OF PLAINTIFFS' EXPERTS
MDL NO. 3047 / CASE NO. 4:22-MD-03047

1   Health and Clinical Outcomes Research at Stony Brook University. Ex. 87, Hale Rep. ¶6; Ex. 19,

2   Hale Dep. 83:8-21. Her research focuses on sleep epidemiology and sleep-related health outcomes.

3   Ex. 87, Hale Rep. ¶8. Dr. Hale is a national leader in her field. She has coauthored over 200 peer-

4   reviewed academic articles primarily on sleep health, including at least 20 articles on screen or

5   social media use; delivered keynote addresses at national and international sleep conferences;

6   served in leadership roles for the National Sleep Foundation; and founded the *Sleep Health* journal

7   and served as its editor-in-chief for five-and-a-half years. *Id.* ¶¶8-9.

8   Dr. Hale's opinion is a rebuttal to the opinion of Meta's witness, Dr. Sarah Honaker. Dr.

9   Honaker opines there is no reliable evidence of a causal relationship between social media use and

10   sleep health. Dr. Hale responds with a robust assessment of the totality of the scientific literature

11   on the subject, which encompasses peer-reviewed articles covering a range of populations,

12   geographies, and study designs, as well as "advice and recommendations from leading sleep and

13   medical societies." *Id.* ¶3. Dr. Hale finds "widely observed and consistent associations between

14   high levels of smart phone use, screen use, and social media use with poorer sleep health." *Id.* ¶41.

15   Dr. Hale concludes that "screen use, smartphone use, and social media use impair sleep health." *Id.*

16   ¶¶3, 41. She also opines that Dr. Honaker improperly bases her opinion on the absence of a

17   "seem[ingly] impossible" perfect causal study; misrepresents several studies; and "fails to address

18   the overall weight of evidence." *Id.* ¶3

19   Meta does not challenge Dr. Hale's qualifications, nor does Meta move to exclude Dr.

20   Hale's opinion in its entirety. Meta critiques the relevance and reliability of Dr. Hale's "Opinion 2

21   and 3," which are, respectively: (i) academic studies assessing the relationship between screen use

22   and sleep are informative of (and underestimate) the relationship between social media use and

23   sleep, and (ii) the totality of the academic literature and expert consensus contradict Dr. Honaker's

24   opinion that there is no causal relationship between social media use and sleep health impairment

25   among adolescents. Meta's critiques are misplaced, as they misstate the basis of Dr. Hale's opinion

26   and contort Section 230 and the relevance and reliability standards under Rule 702.

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      a.   **Dr. Hale applied reliable methods to synthesize and analyze the totality of the scientific evidence to reach her opinion.**

In arguing Dr. Hale's opinion is unreliable, Meta falsely claims that Dr. Hale bases her opinion on the conclusions of two expert consensus panels. Mot. at 89-90. Instead, Dr. Hale's opinion is built on her review and analysis of a wide breadth of peer-reviewed scientific studies, meta-analyses, and systematic reviews concerning screen use, social media use, and sleep health. Review of these types of academic literature within an expert's field constitutes a reliable methodology under Rule 702. *See, e.g.*, *Daubert*, 43 F.3d at 1318 ("Establishing that an expert's proffered testimony grows out of pre-litigation research or that the expert's research has been subjected to peer review are the two principal ways the proponent of expert testimony can show that the evidence satisfies the [reliability] prong of Rule 702.").[22] The individual studies Dr. Hale relied on need not independently *prove* causation; they are still "very useful to answering the question" of causation as discussed above, *supra* §A.2. *In re Bair Hugger*, 9 F.4th at 779. Dr. Hale applied her decades of experience in sleep health research, her judgment, and her analysis of the literature to reliably find that social media use impairs adolescent sleep health.

Meta next faults Dr. Hale for relying on studies of screen use instead of studies focused on Facebook and Instagram. Mot. at 86. To be clear, Dr. Hale opined that social media use, which includes Facebook and Instagram use, impairs adolescent sleep health. *See* Ex. 19, Hale Dep. 107:18-21. Dr. Hale sufficiently explained why it was reasonable for her to extrapolate from screen-use studies in forming that opinion.[23] First, a sizable portion of youth's screen time is dedicated to social media, as reflected in at least two objective studies that Dr. Hale cites in her report. *See id.* 348:12-51:4; Ex. 87, Hale Rep. ¶¶32-33. Second, peer-reviewed studies find that interactive forms of screen use (like social media) "have a stronger negative association with sleep health" than

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[22] *See also Stathakos v. Columbia Sportswear Co.*, 2017 WL 1957063, at *5 (N.D. Cal. May 11, 2017) (Gonzalez Rogers, J.) ("Courts routinely allow experts to utilize their expertise in analyzing and compiling research in their field developed by others."); *Mullins v. Premier Nutrition Corp.*, 178 F. Supp. 3d 867, 895 (N.D. Cal. 2016) (Seeborg, J.) (the "hierarchy of scientific evidence . . . places meta-analyses . . . at the top."); *McMorrow v. Mondelez Int'l, Inc.*, 2020 WL 1237150, at *3 (S.D. Cal. Mar. 13, 2020) (an expert's systematic review of peer-reviewed scientific literature constituted sufficiently-articulated methodology).

[23] The State AGs will refer to the body of scientific literature that Dr. Hale relies upon as "screen-use" studies, though some of these studies distinguish among different categories of screen use or focus on particular types of screen use, such as social media or gaming.

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1   passive forms (like watching television). Ex. 87, Hale Rep. ¶¶34-35. It follows that studies that

2   evaluate the relationship between sleep and screen use generally (inclusive of interactive and

3   passive screen use) "almost certainly" underestimate the harmful effects of interactive use,

4   including social media use. *Id.* ¶36. This reasoning amply supports Dr. Hale's reliance on a

5   developed body of literature on screen use. *See Kennedy*, 161 F.3d at 1228-30 (expert opinion that

6   Zyderm, a collagen product, caused a patient's lupus was admissible absent a study proving "a

7   cause-effect relationship between Zyderm and lupus *in particular*," where the expert used

8   "analogical reasoning" and "peer-reviewed publications and clinical studies" showing a

9   "*connection* between collagen and various autoimmune disorders" (emphasis added)); *Young v.*

10   *Cree Inc.*, 2021 WL 292549, at *9 (N.D. Cal. Jan. 28, 2021) (Gonzalez Rogers, J.) ("In some

11   situations, peer reviewed scientific literature may be unavailable because the issue may be too

12   particular, new, or of insufficiently broad interest to be in the literature," and in such cases "the

13   knowledge underlying" the expert opinion must have "a reliable basis in the knowledge and

14   experience of the relevant discipline" (cleaned up)). And even if some of the sleep harm caused by

15   screen use is attributable to forms of screen use other than social media, Dr. Hale does not need to

16   eliminate all other possible causes of sleep harm for her opinion to be reliable in this consumer

17   protection case, where the relevant inquiry is whether Instagram and Facebook "raise a significant

18   risk of concrete harm." *See In re Social Media*, 753 F. Supp. at 895 (internal quotations omitted);

19   *see also, e.g.*, *FTC v. Neovi*, 604 F.3d 1150, 1158 (9th Cir. 2010) ("If [Defendant] caused or helped

20   to cause substantial injury to consumers, it is no defense to say that consumers nonetheless would

21   have been harmed by someone else.").

22   Meta does not and cannot assail Dr. Hale's reasoning for relying on screen use studies to

23   evaluate social media use. Instead, Meta's single challenge focuses on a 2023 study that Dr. Hale

24   cites for the proposition that social media use occupies a sizable portion of adolescent smart phone

25   use. Consistent with Dr. Hale's assertion, that study found that, on average, 42% of the time that

26   participating youth spent on mobile phones each day was dedicated to social media.[24] As Meta

27   _____

28   [24] Ex. 34, Radesky, et al. (2023), at 27. Dr. Hale testified that this statistic is "very similar" to the
     findings from a Stonybrook University study, Ex. 82, Christakis, et al. (2025), at 477, and the

notes, the study also found that Facebook and Instagram use comprised a modest portion of mobile

phone time (5.9% and 0.1%, respectively). Meta places undue weight on these two data points.

First, as explained, Dr. Hale's opinion is that social media use, generally, causes sleep harm. Thus,

the data point that matters is the total percentage of mobile phone time attributable to *general* social

media use, and Meta cannot dispute that this number is 42%. Furthermore, these two data points

are not necessarily indicative of overall trends. For example, one peer-reviewed study cited in Dr.

Hale's report found, using objective measurement of smartphone use, that "adolescents spent an

average of 1.5 hours on smartphones" during the school day, with Instagram and Facebook ranking

as the first and third most-used apps based on average duration of use (24.61 minutes and 19.88

minutes, respectively).[25] Meta's seeming argument that youth use Facebook and Instagram

minimally is dubious, unsubstantiated, and at best a "factual dispute" to be decided by the fact

finder. *City of Pomona v. SQM N. Am. Corp.*, 750 F.3d 1036, 1049 (9th Cir. 2014).

b.   Dr. Hale's opinions are relevant to issues at the heart of this case regarding harms to youth from Meta's social media platforms.

Meta next argues that Dr. Hale's Opinions 2 and 3 do not fit the facts at issue in this case

because they concern the relationship between social media use and adolescent sleep health, and

do not exclusively focus on the impact of Facebook and Instagram on sleep. Meta ignores what is

glaringly obvious—Dr. Hale's opinions encompass and apply to Facebook and Instagram and

thereby "help the trier of fact to understand" how and why Meta's social media platforms impair

sleep health. Fed. R. Evid. 702(a). Dr. Hale's opinions also educate the factfinder on important,

"general principles" of sleep health and screen use that "fit the allegations and issues of th[e] case."

Brown v. Google, LLC, 2022 WL 17961497, at *10 (N.D. Cal. Dec. 12, 2022) (Gonzalez Rogers,

J.) (quoting Fed. R. Evid. 702 advisory committee's note to 2000 amendment).

Dr. Hale opines on the usage patterns and characteristics of social media that are harmful to

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Adolescent Brain Cognitive Development (ABCD) Study. Ex. 19, Hale Dep. 350:7-20. Though the ABCD study does not directly underlie Dr. Hale's report, it supports her opinion. The study collected data on mobile phone use from over 1,000 U.S. participants aged 12-15 over three weeks and found, on average, 4.8 hours of daily mobile phone use, of which 2.2 hours was social media use. Ex. 88, Alexander, et al. (2024), at tbl. S3.

[25] Ex. 82, Christakis, et al. (2025), at 476-77.

1   sleep. For example, Dr. Hale describes four causal mechanisms through which digital media use

2   can impair adolescent sleep health: "time displacement, psychological arousal, the alerting effect

3   of lights, and nighttime disruptions from notifications." Ex. 87, Hale Rep. ¶45. She further opines

4   that interactive screen use (including social media use) is more harmful to sleep than passive screen

5   use, in part due to platforms' design features and the physical interaction involved in social media,

6   such as scrolling and tapping. *Id.* ¶34. Dr. Hale also explains that the "timing of screen use matters,"

7   and is more harmful closer to bedtime or during nighttime. *See id.* ¶¶46-49.

8   The features and characteristics of digital and social media that Dr. Hale describes are

9   readily identifiable as present in Facebook and Instagram, making her opinions directly applicable

10   to these platforms. The usage patterns she describes also provide the factfinder with critical context

11   as to the importance of evidence of late-night and interactive Facebook and Instagram use, which

12   is in the record.[26] In short, Dr. Hale's opinion helps the factfinder identify the disruptive and

13   arousing aspects of Facebook and Instagram that impair adolescent sleep health.[27]

14   c.   **Dr. Hale opines that platform features specifically play a role in impairing adolescent sleep health.**

15   Finally, Meta faults Dr. Hale for not "disentangl[ing]" the effect of conduct for which Meta

16   can be held liable from content and publishing activities that are protected under Section 230. Mot.

17   at 88. Meta's argument misapprehends Section 230 and this Court's rulings, as detailed in

18   Plaintiffs' Section 230 Brief. Under those rulings, the State AGs' consumer protection deception

19   claims persist as to all of Meta's platform features and the platforms as a whole. *See* Pls.' 230 Br.

20   at II.A. As such, Meta can be held liable for deceiving the public as to the sleep-impairing effects

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22   _____

[26] *See, e.g.,* Ex. 89, META3047MDL-111-00371250, at slide 10 (

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24   ████████████████████████████   .

[27] To the extent that Meta seeks to posit that Facebook and Instagram are distinct in some manner

25   that exempts them from Dr. Hale's opinion on social media use and sleep health impairment, that
      unsubstantiated position is not a ground for exclusion, and Meta can explore it through cross-

26   examination. *See In re PFA Ins. Mktg. Litig.*, 2022 WL 3146557, at *3 (N.D. Cal. June 15, 2022)
      (Gonzalez Rogers, J.) (defendant's challenge to the "fit" of expert testimony regarding the general

27   standards relating to the sale of life insurance did not warrant exclusion, and defendant could
      "explore the applicability (or lack thereof)" of the testimony to the plaintiff's at-issue "recruitment

28   materials . . . through cross-examination").

1   of its platforms and features, upon which Dr. Hale opines. *See, e.g.*, Ex. 87, Hale Rep. ¶34.

2   Furthermore, Section 230 does not require Dr. Hale to excise the effects of content or publishing

3   features on sleep impairment. *See* Pls.' 230 Br. at II.B, II.C. Thus, Dr. Hale's opinion does not run

4   afoul of Section 230 merely because she discusses the stimulating effects of content. Nor is it

5   relevant for Section 230 purposes that Dr. Hale notes that platform features and content are

6   intertwined from a research perspective, in that users engage with them together, making it difficult

7   to design a study that disaggregates the effect of content and features on sleep health.[28] *See, e.g.*,

8   Ex. 19, Hale Dep. 235:23-37:16.

9   Following from Meta's tortured interpretation of Section 230, Meta attacks Dr. Hale for her

10   purported failure to "reliably conclude that Defendants' features," rather than third party content or

11   publishing activities, "can cause the harm Plaintiffs claim." Mot. at 89. Setting aside Meta's flawed

12   premise, this argument also mischaracterizes Dr. Hale's opinion. Dr. Hale details a distinct causal

13   effect that platform features have on adolescent sleep, which is separate from and inapplicable to

14   content. Dr. Hale opines that interactive screen use is more harmful to sleep health than passive

15   screen use, and that interactivity is a product of platform features, not content. *See, e.g.*, Ex. 19,

16   Hale Dep. 231:24-32:14; Ex. 87, Hale Rep. ¶35. She explains that both publishing and non-

17   publishing features "enable [] interactivity" by giving rise to "visual and emotional and actual

18   physical engagement" that makes the content more stimulating, arousing, and disruptive to sleep

19   than if the content was merely passively viewed. *See, e.g.*, Ex. 19, Hale Dep. 236:5-21, 237:12-16,

20   238:23-24; *see also id.* 234:7-35:11 (passive viewing of her kids' photo on a camera is less

21   "engag[ing] emotionally [and] physically" than viewing it on a social media platform, which

22   involves touching the screen and considering "the way that other people respond to it").

23   **11.   Dr. Zicherman's testimony is admissible.**

24   Dr. Bradley Zicherman is a psychiatrist and clinical professor at Stanford University. Ex. 8,

25   Zicherman Rep. ¶5. He directs Stanford's Youth Recovery Clinic, a dual-diagnosis clinic that treats

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[28] Relatedly, some sleep researchers use the word "content" in their studies to refer to "what is
27   happening on the screen"—that is, both the content *and* the features on a social media platform.
     See, e.g., Ex. 19, Hale Dep. 243:9-44:12, 260:1-22. Meta omits this important detail (and thus
28   misrepresents those studies) when making the generic statement that "the studies [Dr. Hale] cites
     rely on content in their analysis of the alleged effect of social media on sleep health." Mot. at 88.

1   youth with co-occurring addiction and mental health concerns. *Id.* ¶¶5, 13. Dr. Zicherman is also

2   the medical director for the Quest program, an intensive outpatient program for youth with

3   addiction and mental health dual diagnoses. *Id.* ¶5. At least half of Dr. Zicherman's patients at the

4   Youth Recovery Clinic have concerning social media use habits or technology addictions, as do

5   many of the patients Dr. Zicherman sees at the Quest program. *Id.* ¶13. Dr. Zicherman has

6   completed several fellowships and board certifications in addiction and youth psychiatry, and he

7   frequently engages in lectures and public appearances regarding youth and social media addiction.

8   *Id.* ¶7-9.

9   Dr. Zicherman's expert opinions are based primarily on his extensive clinical experience

10   treating patients with social media use problems. He opines that social media addiction is a serious

11   concern; that social media use is particularly problematic for youth; that Instagram is a primary

12   contributor to youth mental health concerns; and that many Instagram features are harmful to youth

13   mental health. *Id.* ¶1-4.

14   **a.   Dr. Zicherman's opinions are not barred by Section 230.**

15   Meta is incorrect that Dr. Zicherman's opinions must be excluded because they "fail[] to

16   piece apart any impact of features that can form the basis for liability from those of protected

17   content or publishing features." Mot. at 94. First, as explained in Plaintiffs' Section 230 Brief and

18   in *supra* §I , the AGs' consumer protection deception claims are viable as to *all* Instagram platform

19   features and the Instagram platform as a whole. Second, as Judge Kuhl recognized, Plaintiffs'

20   experts are "not required to opine that content cannot also cause harm." *Soc. Media Cases*, 2025

21   WL 2807828, at *7. In other words, Dr. Zicherman's reasonable recognition that some content can

22   be harmful to youth is entirely consistent with his opinions regarding the features of Instagram that

23   contribute to social media addiction and resulting mental health harms. *See, e.g.*, Ex. 8, Zicherman

24   Rep. ¶¶1-4. Finally, Dr. Zicherman's clinical experience working with youth, combined with

25   literature that corroborates that experience, more than adequately supports his opinion that certain

26   Instagram features, including when assessed in the aggregate, "encourage extended use and . . .

27   make it difficult for youth to disengage from the app." *Id.* ¶¶57-58. For these reasons, and those

28   set forth in Plaintiffs' Section 230 Brief, Dr. Zicherman's opinions are not barred by Section 230.

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b.   Dr. Zicherman's clinical experience provides a reliable methodology to support his opinions.

Meta argues that the "fundamental[]" problem with Dr. Zicherman's testimony is its

reliance on his clinical experience. See Mot. at 96. However, it is well established that clinical

experience is an acceptable basis for expert testimony. *See, e.g.*, *Elosu*, 26 F.4th at 1024 (providing

that medical expert's "specialized knowledge and experience can serve as the requisite 'facts or

data' on which they render an opinion"); *see also* Fed. R. Evid. 702 advisory committee's note to

2000 amendment) ("In certain fields, experience is the predominant, if not sole, basis for a great

deal of reliable expert testimony."). Because medicine is a "learned profession" that relies heavily

on practitioners' experience and judgment, clinical experience is an apt foundation for a physician's

expert testimony. *Primiano v. Cook*, 598 F.3d 558, 565-67 (9th Cir. 2010).

Dr. Zicherman's clinical experience is particularly appropriate here because he is at the

forefront of therapeutic efforts to address social media addiction and related mental health issues.

See Engilis, 151 F.4th at 1054 (explaining that "reliance on extensive clinical experience might be

particularly informative—perhaps necessary"—where the medical profession's understanding of a

medical issue is still developing); *see also* Ex. 8, Zicherman Rep. ¶¶15, 25, 40. Far from

"amount[ing] to mere speculation," Mot. at 95 (citing *Ollier v. Sweetwater Union High Sch. Dist.*,

768 F.3d 843, 861 (9th Cir. 2014)), or making "analytical leap[s]," *id*. (citing *Allison v. McGhan

Med. Corp.*, 184 F.3d 1300, 1314-16 (11th Cir. 1999)), Dr. Zicherman's opinions are grounded in

his experience as a psychiatrist who diagnoses and treats the mental health concerns at issue in this

case. *See Wendell*, 858 F.3d at 1237 (permitting "doctors who stand at or near the top of their field

and have extensive clinical experience" to offer testimony based primarily on their clinical

experience).

Meta's cases support Dr. Zicherman's reliance on his experience. As Meta concedes, expert

testimony may be based "upon professional studies or personal experience." Mot. at 92 (quoting

Kumho, 526 U.S. at 162) (emphasis added); *see also Kumho*, 526 U.S. at 156 ("[N]o one denies

that an expert might draw a conclusion from a set of observations based on extensive and

specialized experience."). As Meta notes, *Kumho* requires experts to "employ in the courtroom the

1   same level of intellectual rigor that characterizes the practice of an expert in the relevant field."

2   Mot. at 92 (quoting *Kumho*, 526 U.S. at 162). Dr. Zicherman has done just that—he formed his

3   opinions in this case on the same basis and with the same rigor he uses to diagnose and treat the

4   young patients he sees in his clinical practice. *See, e.g.*, Ex. 4, Zicherman Dep. 322:1-13; 323:20-

5   21. *In re Acetaminophen*, which admonishes experts to "evaluate all of the scientific evidence when

6   making causation determinations," is also consistent with Dr. Zicherman's evaluation of the

7   evidence available to him as a treating physician when making practice-based conclusions. *See*

8   Mot. at 92-93 (citing 707 F. Supp. 3d 309, 336 (S.D.N.Y. 2023)).

9   Meta faults Dr. Zicherman for working with a patient population that suffers from social

10   media addiction and mental health issues. *See* Mot. at 95. Yet, these are exactly the kinds of young

11   people who are central to the State AGs' claims. *See, e.g.*, 23-cv-05448, ECF 73-2, State AGs'

12   Compl. at ¶¶ 508-26 (discussing mental health issues that vulnerable young people face when using

13   Meta's platforms). As Dr. Zicherman explained, his "clinical experience treating youth with social

14   media addiction provides direct, detailed evidence of mental health harms related to their social

15   media usage, including which social media features are most problematic from the perspective of

16   actual patients and parents." *See* Ex. 14, Zicherman Reb. Rep. ¶3; *see also* Ex. 8, Zicherman Rep.

17   ¶¶1-12; *cf. Casey v. Ohio Med. Prods.*, 877 F. Supp. 1380, 1385 (N.D. Cal. 1995) (Legge, J.)

18   (excluding expert opinion based on only four case reports, where expert had "not treated . . .

19   patients" with the relevant medical concern). Dr. Zicherman does not opine about the prevalence

20   of social media addiction, as Meta implies. Mot. at 95. Instead, he rightly explained that "someone

21   who is an expert in population-level studies" is best placed to address that issue. Ex. 4, Zicherman

22   Dep. 263:2-64:15 (merely asserting a general notion that prevalence is increasing); *see also* Ex. 14,

23   Zicherman Reb. Rep. ¶26 (explaining that statistic discussed in opening report is not indicative of

24   prevalence). In any case, Meta's concerns with the purported limitations of Dr. Zicherman's clinical

25   experience go to the weight of his testimony before the jury, rather than the admissibility of his

26   opinions. *In re Roundup*, 390 F. Supp. 3d at 1150-51.

27   Meta argues that Dr. Zicherman's supposed reliance on "unproduced clinical notes" deems

28   his testimony a "black box." Mot. at 96 (quoting *Open Text S.A. v. Box, Inc.*, 2015 WL 349197, at

1   *6 (N.D. Cal. Jan. 23, 2015)). *Open Text* involved an expert who failed to "spell[] out the steps she

2   took to go from the data to the royalty rate" when calculating royalties. *Id.* Here, Dr. Zicherman is

3   a psychiatrist testifying about the impact of social media on youth mental health, based upon his

4   clinical experience treating youth for social media addiction and related mental health harms.

5   Likewise, Dr. Zicherman's reliance on his clinical experience is not "mere[ly] talismanic." Mot. at

6   97 (citing *Engilis*, 151 F.4th at 1054). Unlike *Engilis*, where the court questioned the expert's

7   reliance on clinical experience in part because the report did not "describe the details of its author's

8   clinical experience," Dr. Zicherman's report provides significant detail about his clinical practice

9   and experience treating youth patients with social media-related mental health concerns. *See, e.g.*,

10   Ex. 8, Zicherman Rep. ¶¶5, 13-15, 38-44.

11   In any event, Dr. Zicherman did not rely on his clinic notes when forming his opinions.

12   Rule 26 requires the disclosure of materials that an expert actively reviews for the purpose of

13   developing their opinions. *See* Fed. R. Civ. P. Rule 26(a)(2)(B) advisory committee's note to 2010

14   amendment; *Republic of Ecuador v. Mackay*, 742 F.3d 860, 869 (9th Cir. 2014) ("Notably, [t]he

15   disclosure obligation extends to any facts or data 'considered' by the expert *in forming* the opinions

16   to be expressed, not only those relied upon the expert.") (quoting *id.*) (emphasis added). With

17   respect to clinician experts, who often continue to see patients while forming their opinions, courts

18   limit the discovery of patient records to circumstances where (1) the expert actively reviewed a

19   "discrete, identifiable, and manageable" number of records "in connection with the formulation of

20   [their] opinion," *In re Benicar (Olmesartan) Prods. Liability Litig.*, 319 F.R.D. 139, 141-42 & n.4

21   (D.N.J. 2017), or (2) the records are the "driving force" behind the expert's opinion, rather than

22   merely "constitut[ing] information relevant to [the expert's] general background or experience,"

23   *McClellan v. I-Flow Corp.*, 710 F. Supp. 2d 1092, 1129 (D. Or. 2010).

24   Neither circumstance applies here. First, Dr. Zicherman repeatedly confirmed that he did

25   not actively review any clinic notes—let alone a "discrete and identifiable set"—in connection with

26   formulating his opinions. *See, e.g.*, Ex. 4, Zicherman Dep. 370:5-71:23 (explaining that "[he] like[s]

27   to reference [his] notes on a daily basis to prepare for working with patients that day" and

28   confirming that "[t]here were no differences" in "how often [he] consulted [his] clinic notes and

1 template during the period when [he was] drafting [his] expert reports and periods when [he was]

2 not").

3   Second, Dr. Zicherman is not opining on the medical diagnosis or treatment of any

4 particular patients, but on the pattern of social media use concerns he has observed throughout his

5 clinical practice. Dr. Zicherman's clinic notes thus "constitute information relevant to [his]

6 background or experience," rather than the "driving force" behind his opinions. *See McClellan*, 710

7 F. Supp. 2d at 1129; Ex. 4, Zicherman Dep. 370:25-71:6 (stating that he did not list his clinic notes

8 and template on his materials considered list because he "did not need to rely on that information

9 to form [his] opinion."); *id.* 380:12 (stating, "I have to work with patients to form an opinion about

10 [] the work I do; but, again, I did not have to reference specific records or schedule templates to

11 form my opinion.").

12   Meta's additional contention that Dr. Zicherman used his clinic notes "as a sword and a

13 shield" misrepresents the record. Mot. at 96 n.43. Dr. Zicherman's report does not reference the

14 notes, and Dr. Zicherman did not affirmatively use them to support his opinions in his deposition.

15 In response to Meta counsel's questions about specific patient details at his deposition, Dr.

16 Zicherman unsurprisingly responded that he would have to refer to his notes and clinic template

17 (i.e., schedule) to fully answer those questions. *See, e.g.*, Ex. 4, Zicherman Dep. 111:2-9; 11:19-

18 25.[29] Dr. Zicherman's inability to recall details about specific patients—who are not the subject of

19 his opinions—in the midst of his busy clinical schedule is both reasonable and expected. It also

20 does not provide a basis to exclude his testimony, and Meta points to no case law holding otherwise.

21 *See* Mot. at 97.

22   c.   **Dr. Zicherman's targeted citations to literature reliably support
23   his clinical experience-based opinions.**

24   Dr. Zicherman's opinions are primarily based on his clinical experience treating youth for

25 social media addiction concerns. *See, e.g.*, Ex. 8, Zicherman Rep. ¶20. Meta's arguments that Dr.

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26 [29] Moreover, the personal mental health records of Dr. Zicherman's patients, many of whom are
27 minors, are subject to protections from disclosure pursuant to the Health Insurance Portability and
   Accountability Act (HIPAA) and implementing regulations. *See* 42 U.S.C. § 1320d *et seq.*; 45
28 C.F.R. Parts 160, 164. Dr. Zicherman did not rely on patient records, and he was careful to not
   disclose information that might fall within HIPAA's protections at his deposition, for this reason
   as well.

1   Zicherman's use of academic literature is "skewed" because he failed to provide a comprehensive

2   literature review or "meta-analysis" are therefore immaterial. *See* Mot. at 92. Dr. Zicherman did

3   not need to—or purport to—undertake a systematic or comprehensive literature review to form his

4   opinions. *See, e.g.*, Ex. 4, Zicherman Dep. 207:9-14. Instead, Dr. Zicherman's opinions reflect his

5   understanding of social media addiction in youth, based on his experience diagnosing and treating

6   this issue and supported by relevant scientific literature and studies where appropriate. *See, e.g.*,

7   Ex. 8, Zicherman Rep. ¶¶13, 20.

8   Dr. Zicherman's Instagram-specific opinions, including that Instagram is a "primary

9   contributor to teen and youth mental health concerns," are also based on this experience. *Id.* ¶3; *see*

10   *also* Ex. 4, Zicherman Dep. 140:8-11 ("[T]he majority of my patients that come in with a social

11   media addiction concern [are] using Instagram, and they identify Instagram as their platform of

12   choice."); *cf. Joiner*, 522 U.S. at 143-47 (affirming exclusion of expert who relied exclusively on

13   studies that were not sufficiently probative). Meta's argument that the literature does not support

14   Dr. Zicherman's Instagram-specific opinions fails for this reason, in addition to those discussed

15   above in §A.4.

16   Dr. Zicherman's experience, including his preexisting knowledge of the academic studies

17   regarding social media and mental health, informed his approach to this literature. Dr. Zicherman's

18   report cited sources, including-peer-reviewed articles, that supported his clinical observations and

19   that provided necessary background for his opinions. *See* Ex. 4, Zicherman Dep. 208:3-7 ("I

20   reference studies that are relevant to supporting my opinion, which is primarily driven and

21   developed based off of actually working with kids that I see with significant social media

22   addictions."). For example, Dr. Zicherman provided sources supporting the notion that there are

23   validated tools for the measurement of problematic social media use, *see* Ex. 8, Zicherman Rep.

24   ¶24 n.12; the assertion that there is a significant amount of research on social media addiction, *see*

25   *id.* ¶26 n.20; and certain generally accepted statements regarding how adolescent brains function,

26   *see id.* ¶¶35-36 nn.26-35. At his deposition, Dr. Zicherman unsurprisingly confirmed that he did

27   not base his opinions on a meta-analysis or comprehensive literature review. *See* Mot. at 93 (citing

28   Ex. 4, Zicherman Dep. 187:22-88:9, 207:16-21).

1   As discussed above, *supra* §B.11.b, the cases Meta cites acknowledge that expert testimony

2   may be based on "personal experience" rather than "professional studies." Mot. at 92 (citing

3   *Kumho*, 526 U.S. at 162). And Meta's only other case, *In Re Roundup Products Liability Litigation*,

4   is irrelevant with respect to Dr. Zicherman. There, the court excluded the opinions of a toxicology

5   researcher who did not work with the relevant patient group—or even humans at all—and expressly

6   relied on a (faulty) literature review. Mot. at 92 (citing 737 F. Supp. 3d 893 (N.D. Cal. 2024)).

7   Here, Dr. Zicherman works directly with the patient population at issue in the State AGs' case, and

8   he based his opinions on that experience, while citing to certain peer-reviewed academic literature

9   and other sources that provide further context for those opinions.

10   **d.   Dr. Zicherman is qualified to opine on the connection between dopamine activity and social media use.**

11

12   Meta argues that Dr. Zicherman's opinions about dopamine should be excluded because Dr.

13   Zicherman was unable to explain how dopamine releases in the brain are measured. Mot. at 97-98.

14   However, Dr. Zicherman's opinions are not necessarily predicated on how dopamine releases are

15   measured in the brain or the mechanism of the dopamine pathway. Dr. Zicherman opined that

16   dopamine is released when social media users take certain actions, such as viewing new posts or

17   likes. *See* Ex. 4, Zicherman Dep. 295:22-25. He did not purport to opine on how those dopamine

18   releases are measured and explained that "[t]he mechanism of dopamine is far less important to

19   [him] than what [he is] actually seeing in [his] clinical practice." *See id.* 331:2-8; *see also* Ex. 14,

20   Zicherman Reb. Rep. ¶21 ("[E]stablishing the role of dopamine in social media addiction is not

21   necessary for my opinion that social media use is a substantial contributor to youth mental health

22   issues. My opinion holds regardless of the specific neurological or psychological mechanisms by

23   which social media use impacts mental health.").

24   Meta also incorrectly claims that Dr. Zicherman is not qualified to opine on the connection

25   between dopamine activity and social media use because he declined to answer specific, detailed

26   neuroscientific questions about dopamine at his deposition. Mot. at 97-98. Dr. Zicherman has an

27   understanding of the dopamine pathway consistent with that of a medical doctor who works with

28   patients with addictions, and this understanding sufficiently supports Dr. Zicherman's experience-

1   based opinions. *See* Ex. 4, Zicherman Dep. 116:9-19; *see also Garcia*, 7 F.3d at 890 (holding that

2   the lack of an expert's particularized expertise goes to the weight of the expert's testimony and not

3   the admissibility of the expert's opinion).

4   Meta's repeated reliance on *In Re Roundup Prods. Liability Litigation*—now to argue that

5   Dr. Zicherman's opinions about dopamine should be excluded—is misplaced. Mot. at 97-98 (citing

6   737 F. Supp. 3d 893). Unlike the toxicologist at issue there, who admitted that they would need to

7   consult a doctor regarding human lymphoma in a case involving human lymphoma, at no point did

8   Dr. Zicherman need to consult with a neuroscientist in order to understand and opine on the role of

9   dopamine in social media addiction from the perspective of a physician. Dr. Zicherman's opinions

10   about dopamine should not be excluded.

11   **12.**   **Dr. Prinstein's testimony is admissible.**

12   Dr. Mitch Prinstein currently serves as the Chief of Psychology, Integration and Strategy

13   for the American Psychological Association, the largest association of psychological professionals

14   in the world. He is also John Van Seters Professor of Psychology at the University of North Carolina

15   at Chapel Hill and co-director of the Winston Center on Technology and Brain Development. Ex.

16   12, Prinstein Rep. ¶6. Dr. Prinstein has researched youths' interpersonal relationships (off- and

17   online) for over twenty-five years, published over two dozen studies in the field of mental health

18   and social or digital media since 2020, and edited an encyclopedia series on adolescent

19   development. *Id.* ¶9. Dr. Prinstein has testified before the United States Senate twice, including

20   specifically on the impact of social media on youth development. *Id.* ¶12. Meta's own expert

21   rebutting Dr. Prinstein, Dr. Randy Auerbach, testified that Dr. Prinstein is "considered an expert"

22   and shared that he listed Dr. Prinstein among the twenty people in his field to provide him a

23   recommendation for tenure at Columbia because he "has a good reputation" and "has published

24   extensively in this space." Ex. 97, Auerbach MDL Dep. 162:2-65:11.

25   Based on his review of hundreds of academic articles and his twenty-five-plus years of

26   experience. Dr. Prinstein opines that (1) youth are sensitive to social feedback and automatic

27   behaviors, and they lack impulse control; (2) these vulnerabilities are exploited by Meta's platform

28   features and functions; (3) Meta's features promote problematic use consistent with clinical

1   dependency; (4) this problematic social media use displaces time spent on other necessary and

2   healthy activities; and (5) Meta's features promote unhealthy social comparison processes. Ex. 12,

3   Prinstein Rep. ¶¶1-5.

4   Meta seeks to exclude Dr. Prinstein's opinions, wholesale, on two grounds. First, Meta

5   relitigates Section 230 in an attempt to use it as a gatekeeping tool to strike Dr. Prinstein under

6   *Daubert*. Second, Meta argues that Dr. Prinstein's methodology is unreliable because he cites

7   emerging data, he supposedly applies different standards in his non-retained expert work, and

8   because some research he cites examines social media more broadly, rather than Meta-specific

9   platforms. Prinstein Mot. at iii. As set forth below, these arguments fail.

10   a.   **Dr. Prinstein's testimony is highly relevant, irrespective of Section 230.**

11

12   Defendants continue to erroneously argue Dr. Prinstein's opinions should be excluded

13   because his opinions "do not control for those activities and features" protected by Section 230.

14   *See* Prinstein Mot. at 1. However, the AGs' consumer protection deception claims apply to *all*

15   Instagram platform features and the entire Instagram platform, as explained above *supra* §I. As

16   Judge Kuhl acknowledged, Plaintiffs' experts are "not required to opine that content cannot also

17   cause harm." *Soc. Media Cases*, 2025 WL 2807828, at *7. Nor does Section 230 apply to

18   appearance-altering filters, time restrictions, or multiple accounts functions ("Finstas"), as

19   discussed by Dr. Prinstein. *In re Soc. Media*, 753 F. Supp. 3d at 868-69; Ex. 12, Prinstein Rep.

20   ¶¶43, 45, 48. Meta's arguments as to relevance under Section 230 are inapplicable to these features.

21   Nor are Dr. Prinstein's opinions on those features so called *ipse dixit*—he bases his conclusions on

22   research, including published, peer-reviewed studies he co-authored, and he corroborates those

23   conclusions with internal Meta documents. *See, e.g.*, Ex. 12, Prinstein Rep. ¶¶23-31, 41-45, 48.

24   Furthermore, Meta's assertion that Dr. Prinstein's opinions "do not control for those

25   activities and features" protected by Section 230 is, at least in some instances, factually incorrect.

26   Dr. Prinstein does cite peer-reviewed research designed to control for content in examining the

27   impact of certain features and functions. *See, e.g., id.* ¶45 n.64; ¶49 n.75; Ex. 3, Prinstein Dep.

28   230:10-15 ("There are a number of studies that ask specifically about things like notifications, likes,

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1   beauty filters. There's also been some research that's experimentally controlled for content with

2   those functions included or content without."). Regardless, "Plaintiffs need only show that they

3   were harmed by the design features of Defendants' platforms—they do not need to show that they

4   were not harmed by third-party content as well." *Soc. Media Cases,* 2025 WL 2807828, at *10

5   (citing *Internet Brands, Inc.*, 824 F.3d at 853).

6   **b.   Dr. Prinstein's testimony is methodologically sound.**

7   Dr. Prinstein's expert opinion is that social media is a significant contributing *risk* factor

8   for mental health harms for many adolescents. *See* Ex. 12, Prinstein Rep. ¶¶1-5. That opinion is

9   based on his review of a considerable and expansive body of peer-reviewed scientific literature, his

10   experience in the field as both a professor and within the American Psychological Association, and

11   his twenty-five-plus-years conducting and publishing findings from various research methods

12   including prospective longitudinal research, experimental studies, school-based surveillance, in

13   vivo lab-based biological sampling, and neuroimaging. *See id.* ¶21. Dr. Prinstein's review of

14   relevant peer-reviewed literature, in conjunction with his extensive, relevant professional

15   experience, is a proper and reliable methodology. *See Hardeman*, 997 F.3d at 967.

16   **c.   Meta ignores the expansive body of research Dr. Prinstein cites.**

17   Meta claims that "Dr. Prinstein bases his opinion that social media causes mental health

18   harms . . . on unspecified 'emerging data'" and that he relies on "two studies" from his rebuttal

19   report for this opinion. *See* Prinstein Mot. at 4. But that argument ignores that these are merely two

20   out of hundreds of studies that Dr. Prinstein cites in his report of varying designs and

21   methodologies. As explained above, *supra* §A.2, studies that do not in themselves *prove* causation

22   "can [still] be brought to bear on the question of causation and can be very useful to answering that

23   question." *In re Bair Hugger*, 9 F.4th at 779 (cleaned up). The cases Meta cites to argue that Dr.

24   Prinstein uses *ipse dixit* reasoning are also inapposite, as the experts in those cases lacked the kind

25   of sprawling, peer-reviewed body of published research Dr. Prinstein has considered here. *See*

26   Prinstein Mot. 3-6 (citing *Joiner,* 522 U.S. at 144-45 (expert relied on limited animal studies and

27   epidemiological studies under exceptionally distinct circumstances)); *Open Text*, 2015 WL 349197,

28   at *5-6 (expert excluded for calculating royalties using qualitative measure of value with no

1   methodology, case makes no reference to literature); *Perry v. Novartis*, 564 F. Supp. 2d 452, 464

2   (E.D. Pa. July 9, 2008) (experts excluded who used animal studies on issues never examined in

3   human studies).

    d.   Dr. Prinstein's testimony grows from his pre-litigation, peer-reviewed research.

5   Meta seeks to exclude Dr. Prinstein because he supposedly applies a different standard in

6   his non-retained work than in this case. Prinstein Mot. at 6. Meta bases this argument on the fact

7   that Dr. Prinstein has never written the magic words, "social media causes harm to teenagers," and

8   because he testified that "mechanistic-level causation"—as is used in academic literature—was not

9   necessary to reach his conclusions that social media is a significant *risk* factor for mental health

10 problems for many kids. Prinstein Mot. at 6 (citing Prinstein Dep. 179:15-80:6). As Dr. Prinstein

11 explained, having "mechanistic-level causation," would mean "that we can understand each step of

12 the process by which an independent variable through many mediators leads to the outcome

13 variable, and we can demonstrate how each of those steps is occurring." Ex. 3, Prinstein Dep. 106:3-

14 08:7. But whether there is "mechanistic-level causation" is not the relevant inquiry in this consumer

15 protection case; instead it is whether Instagram and Facebook "raise a significant risk of concrete

16 harm." *See In re Social Media*, 753 F. Supp. at 895 (internal citation omitted).

17   Dr. Prinstein cites peer-reviewed scientific literature in support of his opinions, including

18 peer-reviewed articles he co-authored before the commencement of this case observing the impacts

19 of social media on adolescent development. *See, e.g.*, Ex. 12, Prinstein Rep. ¶37 & n.41; ¶44 &

20 n.62; ¶48 & n.72. "Establishing that an expert's proffered testimony grows out of pre-litigation

21 research or that the expert's research has been subjected to peer review are the two principal ways

22 the proponent of expert testimony can show that the evidence satisfies the [reliability] prong of

23 Rule 702." *Daubert*, 43 F.3d at 1318 (applying standard articulated by U.S. Supreme Court after

24 remand). But simply because an expert has "phrased [his] conclusions differently in an academic

25 context does not mean that the conclusions [are] in fact . . . different." *In re Abbott*, 2025 WL

26 1283927, at *14.

27   Dr. Prinstein further explained that while randomized controlled trials prospectively

examining social media use versus abstinence would be ideal for demonstrating "mechanistic level causation," such research was limited due to ethical restraints. Ex. 26, Prinstein Reb. Rep. ¶27. But this does not mean that the available research does not support causation. Dr. Prinstein explained that while randomized controlled trials that prospectively examine social media use versus abstinence would be a perfect scenario for demonstrating "mechanistic level causation," he pointed to prospective longitudinal designs as a common substitute, which allow researchers to "isolate the effects of the variables of interest" to predict developmental outcomes. *Id.* ¶28. This kind of study "is commonly used to understand other potential risk factors that would be unethical to manipulate experimentally, such as the effects of maltreatment and abuse on children's intellectual and emotional outcomes." *Id.* Dr. Prinstein relied on such prospective longitudinal research, including peer reviewed research that he co-authored before this case, for supporting his opinions. *See, e.g.*, Ex. 12, Prinstein Rep. ¶44 n. 62; ¶48 n.72; ¶54 n.92; ¶55 n.95; ¶ 9 n.113; *see also* Ex. 96, Nick, et al. (2022) ("[D]igital stress is associated concurrently with greater proclivities toward social interaction and status, reflected by higher levels of social media use and importance, greater peer importance, and greater popularity. Higher levels of digital stress were associated concurrently with greater mental health and psychosocial difficulties."); Ex. 3, Prinstein Dep. 87:18-20 ("And we're seeing that the more digital stress kids are reporting, the more depression they're reporting over the course of the next year.").

e. Dr. Prinstein opines on features and functions on Meta's platforms.

Meta argues that Dr. Prinstein's opinions should be excluded because he relies on studies that address social media in general rather than Meta's Platforms, Instagram and Facebook, specifically. Prinstein Mot. at 6. This argument "that their social media platforms are so different from each other that it would be scientifically unreliable to investigate their mental health effects as a group" was rejected by Judge Kuhl. *Soc. Media Cases*, 2025 WL 2807828, at *12, 40, 52. As Judge Kuhl observed for other experts, "[i]f Defendants believe that [the expert's] analysis is factually in error as to whether a Defendant's social media platform includes some or all of the features he has relied on in reaching his opinions, the criticism is a proper subject of cross

1   examination at trial." *See Soc. Media Cases,* 2025 WL 2807828, at *20; *see also In re PFA Ins.*

2   *Mktg. Litig.,* 142011 WL 3146557, at *103 (N.D. Cal. June 15, 2022) (Gonzalez Rogers, J.)

3   (testimony on general standards for sale of life insurance admissible and "Defendants may explore

4   the applicability (or lack thereof)" of expert's opinion to at-issue "recruitment materials . . . through

5   cross-examination"); *see also supra* §A.4.

6   Meta's arguments should be rejected here, too, given that Dr. Prinstein's opinions are based

7   on common features across social media platforms as discussed in the literature, including features

8   on Meta's Platforms. *See* Ex. 3, Prinstein Dep. 36:3-37:12. Further, Meta's arguments about the

9   weight of evidence regarding other social media platforms more broadly is a matter for juror

10   discretion, not Daubert exclusion. *See Soc. Media Cases,* 2025 WL 2807828, at *20; *In re PFA Ins.*

11   *Mktg. Litig.,* 142011 WL 3146557, at *103.

12   **C.   Non-Retained Expert Mr. Béjar's testimony is admissible.**

13   Plaintiffs offer Arturo Béjar, a former Meta engineer, to provide testimony on how Meta's

14   platforms create an unsafe environment for youth and facilitate addictive and problematic use. *See*

15   Ex. 92, May 16, 2025, Non-Retained Expert Disclosures ("Discls.").[30] Judge Kuhl found "Bejar

16   can testify as to his observations at Meta regarding 'problematic use' and to conclusions reached

17   about features associated with such use. He also can testify as to observations at Meta regarding

18   Meta's discussions of addiction or potential addiction." *Soc. Media Cases*, 2025 WL 2807828, at

19   *20. Judge Kuhl further found that Mr. Béjar "is qualified to provide expert testimony" on the

20   question of whether "Meta's platforms were designed to and in fact do encourage 'excessive use';"

21   an opinion Meta did not challenge. *Id.* This is because he has "substantial experience with social

22   media platform design" and social media platform safety. *Id.* Judge Kuhl also held that Mr. Béjar's

23   expert testimony was reliable because he "applied industry practice testing to Instagram's design

24   features." *Id.* at *20-21. The same is true here.

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28   [30] Plaintiffs withdrew language from the Non-Retained Expert Disclosures regarding Mr. Béjar's
     opinions regarding mental health harms. Plaintiffs served amended Disclosures reflecting these
     modifications and withdrawal of Ms. Rubaek's expert testimony.

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1.   Mr. Béjar is qualified to testify on the matters for which he is disclosed.

Mr. Béjar is a well-recognized type of non-retained expert: an employee or former employee who is a "percipient witness" to "facts or data at issue in the litigation," and who applies background expertise to such facts or data to form opinions. *See Guarantee Tr. Life Ins. Co. v. Am. Med. & Life Ins. Co.*, 291 F.R.D. 234, 237 (N.D. Ill. 2013); *see also Jesus Church of Victoria Texas, Inc. v. Church Mut. Ins. Co.*, 627 F. Supp. 3d 715, 723 (S.D. Tex. 2022). To determine whether a non-retained expert is sufficiently qualified, courts consider whether his "experience is reliably applied to the facts." *Obesity Rsch. Inst., LLC v. Fiber Rsch. Int'l*, LLC, 2017 WL 1174756, at *3 (S.D. Cal. Mar. 29, 2017). Mr. Béjar easily meets this standard.

Mr. Béjar is an engineer who is a widely-recognized expert in digital platform safety and security, having worked in this area for 30 years. From 1994 to 1998, Mr. Béjar worked for Electric Communities, an early social media startup where he designed a platform "for kids" where "people couldn't interact with each other in an unsafe fashion." Ex. 90, Béjar MDL Dep. 29:5-14, 698:13-99:15, 714:9-13. From 1998 to 2009, Mr. Béjar worked at Yahoo!. *Id.* at 30:3-17. He was responsible for user safety across the company's various products, *id.* at 31:18-32:2, and eventually served as the equivalent of a chief security officer, *id.* at 32:14-33:2. Mr. Béjar developed systems to address "grooming" of children by sexual predators, child pornography, and other child endangerment issues. *Id.* at 32:22-24, 45:22-46:5, 769:15-21, 799:2-7. Mr. Béjar also worked on age verification, parental verification, and tools to address bullying, harassment, suicide, and self-harm issues. *Id.* at 767:25-68:11, 832:22-33:18. From 2009 to 2015, Mr. Béjar worked at Meta, including leading its Protect and Care team, which was directly responsible for the safety of children on Facebook. *Id.* at 43:16-21. Mr. Béjar's team developed Facebook's child safety framework, including a system for children to report harms and for the company to respond to them. *Id.* at 43:11-44:21. This framework sought to address a wide range of safety issues, including grooming and sextortion (*i.e.*, adults attempting to sexually exploit minors), bullying, and self-harm. *Id.* at 44:22-47:20. When Meta acquired Instagram in 2012, Instagram was given access to the safety framework that Mr. Béjar had developed. *Id.* at 55:10-56:3. Instagram made negligible

1   process on implementing this framework, as Mr. Béjar discovered when he returned to work at

2   Meta from 2019 to 2021. *Id.* at 145:13-46:4, 501:14-04:9, 1186:11-20.

3   In 2019, Meta re-hired Mr. Béjar, this time for a consulting role in which they needed a

4   "world class leader" with "in-depth experience in understanding user bad experiences . . .

5   translating it to product ideas . . . and designing long-term . . . technical architectures to support

6   users as they experience these bad moments." Ex. 91, Béjar MDL Dep. Ex. 8. This job, per Meta,

7   required a "thought-leader in the space" with "20+ years of industry experience." *Id.* Meta

8   personnel recommended hiring Mr. Béjar because he would "bring industry-leading expertise to

9   bear" in the role. As a consultant, Mr. Béjar performed an assessment of Instagram's safety

10   framework to identify existing problems for users and identify existing solutions. Ex. 90, Béjar

11   MDL Dep. 504:4-9.

12   In short, Mr. Béjar's qualifications are directly related to the subject matter on which he

13   intends to testify, i.e., how Meta's platforms cause an unsafe environment for youth and how they

14   were designed to cause addictive or problematic use. *See* Ex. 92, Discls. For example, he testified

15   that he has tackled questions such as: "How many times is too many times that a kid picks up a

16   phone a day? How much time is too much time spent? What is the role that the product design is

17   having on the kids' well-being, on whether they're doing homework, whether they're staying up at

18   night, all of these other issues." Ex. 93, Béjar JCCP Dep. 89:24-90:4. Mr. Béjar's expertise in digital

19   platform safety and security allows him to address these questions by looking to the "ground truth

20   of data in the product, in the company's logs," and by considering the effectiveness of

21   "interventions" made in the form of product features. *Id*. at 90:5-8, 93:23-94:6.

22   Defendants' attacks on Mr. Béjar's qualifications are almost entirely based on their

23   mischaracterization of the scope of his anticipated testimony, and should be rejected. Here, as in

24   the JCCP, Defendants attack Mr. Béjar for not being a clinician. However, he has never purported

25   to be one, and he will not provide opinions on "causes of mental health conditions in teens,"

26   "clinical conditions," "teen mental health," or "whether social media is capable of causing mental

27   health harms" from a clinical perspective. Mot. at 73, 75. Instead, Mr. Béjar's anticipated testimony

28   will be about how Meta's platforms are unsafe, and *not* about diagnosing clinical mental health

1   disorders that stem from social media use. *See* Ex. 92, Discls. Thus, Defendants' criticism that he

2   "has no education or training in medicine, psychology, neurology, epidemiology, or statistics" is

3   irrelevant. Mot. at 73. Here, Plaintiffs do not offer Mr. Béjar as an expert witness as to "harms

4   associated with Meta's platforms, including addiction/problematic use, anxiety, depression, eating

5   disorders, body dysmorphia, suicidality, self-harm, and sexualization." *Soc. Media Cases*, 2025

6   WL 2807828, at *20 (internal citation omitted).

2.   Mr. Béjar's methodologies are sound.

8   Mr. Béjar's opinions that Instagram's features lead to addictive or problematic use and that

9   its safety features are ineffective are based on his decades of experience assessing the safety of

10   online platforms, as well as years of research, including surveys and discussions with users and

11   their families on Instagram use specifically. "In essence, Bejar used his knowledge and expertise

12   of social media platforms to test whether Instagram's safety features actually worked. Bejar relies

13   on this testing to conclude that Meta's statements regarding safety were 'misleading.'" *Social

14   Media Cases*, 2025 WL 2807828, at *21. Indeed, Meta trusted him to use these very methodologies

15   to carry out his responsibilities at the company to assess the risk of harms posed by Meta's features.

16   *See* Ex. 93, Béjar JCCP Dep. 56:15-58:1, 282:16-83:5, 310:15-11:7; Ex. 90, Béjar MDL Dep.

17   200:5-13, 996:17-23, 1002:14-18, 1008:14-09:6.

18   An expert testifying based on industry experience like Mr. Béjar offers reliable testimony

19   when he can explain how that experience leads to the conclusion reached, why that experience is a

20   sufficient basis for the opinion, and how that experience is reliably applied to the facts." *Fed. Trade

21   Comm'n v. Qualcomm Inc.*, 2018 WL 6460573, at *4 (N.D. Cal. Dec. 10, 2018) (Koh, J.). Here,

22   Mr. Béjar testified that he applied the same skills and methods he used while at both Yahoo! and

23   Meta. *See* Ex. 90, Béjar MDL Dep. at 200:5-13, 996:15-25, 1002:14-18, 1008:14-22; Ex. 93,Béjar

24   JCCP Dep. 56:15-58:1, 282:16-83. Ignoring his actual testimony, Defendants characterize his work

25   as limited to testing "Instagram's content recommendations between 2023 and 2024," *Id.* at 75.

26   This is false. After leaving Meta, Mr. Béjar continued to perform a variety of tests on the

27   effectiveness of the full suite of the safety features Meta advertised to the public. Ex. 90, Béjar

28   MDL Dep. 145:13-45:4, 159:4-60:6, 166:5-69:25, 196:25-99:15. To accomplish these tests, Mr.

1   Béjar created accounts on Instagram of purported-minors, as well as an account for an adult male,

2   on devices that otherwise contained no user data, to simulate a new phone given to a child. *Id.*

3   196:25-97:17, 199:16-200:2, 373:1-13, 424:7-20, 996:9-11. Then, Mr. Béjar performed tests using

4   these accounts to see whether safety features that Meta marketed to the public were effective. For

5   example, Meta's marketing claimed that Instagram restricted adults from messaging minors on

6   Instagram who don't follow them, and that it had a safety feature that would block abusive messages

7   to teens. *Id.* 424:13-26:24. Mr. Béjar tested these safety features to assess the veracity of Meta's

8   public claims about their safety features and determined they were not accurate; not only did

9   Instagram allow adults to message unconnected minors, but that messages telling a minor she

10   should "kill yourself" were not being blocked and that Meta would assert that such messages did

11   not violate its policies. *Id.* 425:11-27:25, 430:2-14. The fact that a layperson could go through the

12   same "steps" as Mr. Béjar in his testing, Mot. at 75; Ex. 90, Béjar MDL Dep. 1011:2-14, does not

13   mean that they would know which steps to take, or how to perform a comprehensive assessment.

14   *See Finley*, 301 F.3d at 1013 ("[C]ase law recognizes the importance of expert testimony when an

15   issue appears to be within the parameters of a layperson's common sense, but in actuality, is beyond

16   their knowledge.").

17   These methods are testable, replicable, and falsifiable. Mr. Béjar's protocol describes the

18   steps he took in his assessment, many of his tests were captured in video, and Mr. Béjar provided

19   additional descriptions during his depositions. *See, e.g.*, Ex. 90, Béjar MDL Dep. 196:16-199:15,

20   Ex. 94, Béjar Dep. Ex. 12 (Mr. Béjar's testing protocol); Ex. 95, Béjar Dep. Ex. 13 (video capture

21   of one of Mr. Béjar's tests). Meta cites to no cases for the claim that an expert's methodology must

22   be "comprehensively documented," or that "clearly defined harm categories" must be identified in

23   advance of a test. Mot. at 77. Mr. Béjar acknowledges that some test results "are not going to be

24   identically repeatable because of the combination of factors that went into the creation of the video.

25   That doesn't mean that that video doesn't accurately capture something that's important." Ex. 93,

26   Béjar JCCP Dep. 278:2-20. This is simply a recognition that Meta's algorithms are dynamic, and

27   that no user can fully control what content they are recommended. And, as described above, many

28   of Mr. Béjar's tests involved the performance of static features like direct messaging permissions:

1   and Meta offers no explanation for why *those* tests are not replicable. Further, Mr. Béjar's testing

2   *has* been independently replicated. Earlier this year, Cybersecurity for Democracy, a research group

3   at New York University, validated Mr. Béjar's findings by independently testing the same safety

4   features using the same methodology. They confirmed that the safety features did not perform as

5   advertised. *See* Ex. 98, Teen Accounts, Broken Promises – How Instagram is Failing to Protect

6   Minors.

7   It also is not a basis for exclusion that Mr. Béjar's testing methods have not been subjected

8   to peer or external review. *See, e.g.*, *Shimozono v. May Dep't Stores Co.*, 2002 WL 34373490, at

9   *3 (C.D. Cal. Nov. 20, 2002) ("Where an expert testimony concerns 'special knowledge' rather

10   than hard science, its reliability depends heavily on the knowledge and experience of the expert...

11   Accordingly, some of the Daubert factors (peer review, publication, potential error rate, etc.) are

12   not applicable..."). Moreover, "[t]he fact that Bejar's testing is not supported by any academic

13   practice or literature does not change the undisputed fact that Bejar applied industry practice testing

14   to Instagram's design features." *Soc. Media Cases*, 2025 WL 2807828, at *21.[31]

15   Finally, Defendants' argument that Mr. Béjar's opinions being based, in part, on the content

16   published on Instagram disqualifies him as an expert, Mot. at 78, is without merit for the reasons

17   set forth in *supra* §I and Plaintiffs' 230 Brief. In addition, this Court previously declined to apply

18   those same arguments to claims sounding in deception, and Mr. Béjar's opinions are relevant to the

19   falsity of Meta's public statements. *In re Soc. Media*, 753 F. Supp. 3d at 930.

20   In sum, Mr. Béjar is qualified to give the opinions he offers, and his methods are sufficiently

21   reliable under *Daubert*.

22

23   _____

[31] *See, e.g.*, *Arriaga v. Logix Fed. Credit Union*, 2022 WL 3052318, at *2 (C.D. Cal. Apr. 22, 2022)

24   (individual "qualified as an expert based on [their] more than ten years of experience in the credit
     industry and specialized knowledge obtained through such experience."); *Victorino v. FCA US*

25   *LLC*, 2018 WL 2551192, at *4 (S.D. Cal. June 4, 2018) (personal knowledge and years of
     experience qualify individual as expert on automotive design); *Ralston v. Mortg. Invs. Grp., Inc.*,

26   2011 WL 6002640, at *3 (N.D. Cal. Nov. 30, 2011) (Individual's "twenty-five years of industry
     experience as a practicing mortgage broker, including fifteen years running his own brokerage, and

27   substantial experience training, consulting, and communicating with others in the field, qualifies
     him as an expert in his field").

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1   **V.   CONCLUSION**

2   For the foregoing reasons, Defendants' motion should be denied. Plaintiffs' experts are

3   well-qualified in their respective fields and provide reliable testimony that will assist the jury on

4   issues relevant to general causation. Defendants' arguments are based on myriad false premises and

5   do not undermine Plaintiffs' experts' proffered testimony. Defendants will have a full and fair

6   opportunity to cross-examine Plaintiffs' experts and test supposed gaps in proof at trial, but none

7   of Defendants' challenges are grounds for exclusion.

8   DATED: November 7, 2025

9   Respectfully submitted,

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RESPONSE TO MOTION TO EXCLUDE GENERAL
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MDL NO. 3047 / CASE NO. 4:22-MD-03047

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CAUSATION TESTIMONY OF PLAINTIFFS' EXPERTS
MDL NO. 3047 / CASE NO. 4:22-MD-03047

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ATTESTATION

2   I, Lexi J. Hazam, hereby attest, pursuant to N.D. Cal. Civil L.R. 5-1, that the concurrence

3   to the filing of this document has been obtained from each signatory hereto.

4   **DATED:** November 7, 2025   */s/ Lexi J. Hazam*

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